

10 APPENDIX A: DEFINITION OF COMMON TERMS USED IN EN ROUTE FORECASTS AND ADVISORIES

Table A-1. Definition of Common Terms Used in En route Forecasts and Advisories (FA, SIGMET, AIRMET, TCA, VAA, ROFOR)

Contraction	Translation	Definition
EMBD	Embedded thunderstorms or cumulonimbus	Thunderstorms or cumulonimbus (CB) clouds that are embedded in cloud layers or concealed by haze.
EXTREME TURB	Extreme Turbulence	Turbulence in which aircraft is violently tossed about and is practically impossible to control. It may cause structural damage.
FIR	Flight Information Region	An airspace of defined dimensions within which flight information service and alerting service are provided.
FL	Flight Level	A surface of constant atmospheric pressure which is related to a specific pressure datum, 1013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals.
FRQ	Frequent thunderstorms or cumulonimbus	Consisting of elements with little or no separation between adjacent thunderstorms with a maximum spatial coverage greater than 75 percent of the area affected by the phenomena at a fixed time or during the period of validity.
IMC	Instrument Meteorological Conditions	Ceiling greater than or equal to 500 feet to less than 1,000 feet and/or visibility greater than or equal to 1 to less than 3 miles. LIMC is a sub-category of IMC, thus, IMC conditions are ceiling less than 1,000 feet and /or visibility less than 3 miles.
ISOL	Isolated thunderstorms or cumulonimbus	Consisting of individual features affecting an area with a maximum spatial coverage less than 50 percent of the area affected by the phenomena at a fixed time or during the period of validity.
LINE TS	Line (of thunderstorms)	A line of thunderstorms being at least 60 miles long with thunderstorms affecting at least 40 percent of its length
LIMC	Low Instrument Meteorological Conditions	Ceiling less than 500 feet and/or visibility less than 1 SM. LIMC is a sub-category of Instrument Meteorological Conditions.
MVMC	Marginal Visual Meteorological Conditions	Ceiling greater than or equal to 1,000 feet to less than or equal to 3,000 feet and/or visibility greater than or equal to 3 to less than or equal to 5 miles.
MOD ICE	Moderate Icing	The rate of accumulation is such that even short encounters become potentially hazardous and use of deicing/anti-icing equipment or diversion is necessary.
MOD TURB	Moderate Turbulence	Turbulence that causes changes in attitude (pitch, roll, yaw) and/or altitude, but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed.

Contraction	Translation	Definition
MT OBSC	Mountain Obscuration	Conditions over significant portions of mountainous geographical areas are such that pilots in flight should not expect to maintain visual meteorological conditions or visual contact with mountains or mountain ridges near their route of flight.
OBSC	Obscured thunderstorm or cumulonimbus	Obscured by haze, smoke or cloud or cannot be readily seen due to darkness.
OCNL	Occasional thunderstorms or cumulonimbus	An area with a maximum spatial coverage between 50 and 75 percent of the area affected by the phenomena at a fixed time of during the period of validity.
SCT	Scattered	25 to 50 percent of area affected.
SEV ICE	Severe Icing	The rate of accumulation is such that normal deicing/anti-icing equipment fails to reduce or control the hazard. Immediate diversion is necessary.
SEV TURB	Severe Turbulence	Turbulence that causes large, abrupt changes in altitude and/or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control.
VMC	Visual Meteorological Conditions	Ceiling greater than 3,000 feet and visibility greater than 5 miles.
VOLCANIC ERUPTION	Volcanic Eruption	A volcano eruption has occurred when an eruption report is received from a volcano observatory. A volcanic eruption is also considered to have occurred regardless of volcano observatory notification if reported by PIREP, or ground observer, or if remote sensing data indicates that an eruption has occurred based on satellite imagery or WSR-88D radar data or any other reliable sources are identified.
VOLCANIC ASH	Volcanic Ash	Any ash that can be seen by any one or more of the following: satellite imagery (visible, IR, multi channel or TOMS), PIREPs, ground observations, radar and VAFTAD (In the event volcanic ash is entrained in clouds, the volcanic ash will be treated as visible using the VAFTAD as guidance).
WDLY SCT	Widely Scattered	Less than 25 percent of area affected
WDSPR	Widespread	50 percent or greater of the area affected

11 APPENDIX B: CONTRACTIONS AND ACRONYMS

A

		AFT	After... (time or place)
		AFTN	Afternoon
		AFSS	Automated Flight Service Station
AAA	(or AAB, AAC...etc., in sequence) Amended meteorological message (message type designator)	<u>AGL</u>	Above ground level
AAWU	Alaskan Aviation Weather Unit	AGN	Again
ABNDT	Abundant	AGRDT	Agreed
ABNML	Abnormal	AHD	Agrees
ABT	About	AIREP	Agreement
ABV	Above	<u>AIRMET</u>	Ahead
AC	Altocumulus or Convective Outlook		Air-report
ACARS	Aircraft communication and addressing system		Airman's Meteorological Information (Information concerning en-route weather phenomena which may affect the safety of low-level aircraft operations)
ACC	Altocumulus Castellanus	AK	Alaska
ACCID	Notification of an aircraft accident	AL	Alabama
ACCUM	Accumulate	ALF	Aloft
ACFT	Aircraft	ALG	Along
ACPY	Accompany	ALGHNY	Allegheny
ACRS	Across	ALQDS	All quadrants
ACSL	Altocumulus Standing Lenticular	ALSTG	<u>Altimeter setting</u>
ACT	Active or activated or activity	ALT	Altitude
ACYC	Anticyclone	ALTHO	Alberta
ADA	Advisory area	ALTM	Although
ADDN	Addition or additional	ALUTN	<u>Altimeter</u>
ADJ	Adjacent	AMD	Aleutian
ADQT	Adequate		Amend or amended (used to indicate amended meteorological message; message type designator)
ADQTLY	Adequately		
ADRNDCK	Adirondack		
ADVCT	Advect	AMDG	Amending
ADVCTD	Advected	AMDT	Amendment
ADVCTG	Advecting	AMP	Amplify
ADVCTN	Advection	AMPG	Amplifying
ADVCTS	Advects	AMPLTD	Amplitude
ADVN	Advance	AMS	
ADVNG	Advancing	AMSL	Above mean sea level
ADVY	Advisory	AMT	Amount
ADVYS	Advisories	ANLYS	Analysis
AFCT	Affect	ANS	Answer
AFCTD	Affected	AOA	At or above
AFCTG	Affecting	AOB	At or below

AP	Airport or anomalous propagation	BDA	Bermuda
APCH	Approach	BDRY	Boundary
APCHG	Approaching	BECMG	Becoming
APCHS	Approaches	BFR	Before
APLCN	Appalachian	BGN	Begin
APLCNS	Appalachians	BGNG	Beginning
APPR	Appear	BGN	Begins
APPRG	Appearing	BHND	Behind
APPRS	Appears	BINOVC	Breaks in overcast
APR	April	BKN	Broken
APRNT	Apparent	BL...	Blowing (followed by DU = dust, SA = sand or SN = snow)
APRX	Approximate or approximately	BLD	Build
AR	Arkansas	BLDG	Building
ARFOR	Area Forecast (in aeronautical meteorological code)	BLDUP	Buildup
ARND	Around	BLK HLS	Black Hills
AS	Altocstratus	BLKT	Blanket
ASC	Ascend to or ascending to	BLKTG	Blanketing
ASSOCD	Associated	BLKTS	Blankets
ASSOCN	Association	BLO	Below clouds
AT...	At (followed by time at which weather change is forecast to occur)	BLW	Below...
ATLC	Atlantic	BLZD	Blizzard
ATP	At...(time or place)	BND	Bound
ATTM	At this time	BNTH	Beneath
ATTN	Attention	BR	Mist
AUG	August	BRF	Brief
AVBL	Available or availability	BRK	Break
AVG	Average	BRKG	Breaking
AWC	Aviation Weather Center	BRKHIC	Breaks in higher clouds
AWT	Awaiting	BRKS	Breaks
AZ	Arizona	BRKSHR	Berkshire
AZM	Azimuth	BRM	Barometer
		BLDU	Blowing Dust
		BLSA	Blowing Sand
		BLSN	Blowing Snow
		BTL	Between layers
		BTN	Between
		BYD	Beyond

B

BACLIN	Baroclinic
BAJA	Baja, California
BASE	Cloud base
BATROP	Barotropic
BC	British Columbia
BCFG	Fog patches
BCH	Beach
BCKG	Backing

C

C	Degrees Celsius (Centigrade) or centre (runway identification)
CA	California
CAA	Cold air advection
CAPE	Convective Available

	Potential Energy	CNTY	County
CARIB	Caribbean	CNTYS	Counties
CASCDS	Cascades	CNVG	Converge
CAT	Category or Clear air turbulence	CNVGG	Converging
CAVO	Visibility, cloud and present weather better than prescribed values or conditions	CNVTN	Convection
		CNVTV	Convective
		CNVTVLY	Convectively
		CONFDC	Confidence
CB	Cumulonimbus	CO	Colorado
CC	Cirrocumulus	COMPR	Compare
CCA	(or CCB, CCC...etc., in sequence) Corrected meteorological message	COMPRG	Comparing
CCLDS	Clear of clouds	COMPRD	Compared
CC	Counterclockwise	COMPRS	Compares
CCSL	Cirrocumulus Standing Lenticular	COND	Condition
CDFNT	Cold front	CONS	Continuous
CDN	Coordination	CONT	Continue(s) or continued
CFP	Cold front passage	CONTLY	Continually
CHC	Chance	CONTG	Continuing
CHCS	Chances	CONTRAILS	Condensation trails
CHG	Modification (message type designator)	CONTDVD	Continental Divide
CHGD	Changed	CONUS	Continental U.S.
CHGG	Changing	COORD	Coordinates
CHGS	Changes	COR	Correct or correction or corrected (used to indicate corrected meteorological message; message type designator)
CHSPK	Chesapeake	COT	At the coast
CI	Cirrus	COV	Cover or covered or covering
CIG	Ceiling	CPBL	Capable
CIGS	Ceilings	CPC	Climate Prediction Center
CIT	Near or over large towns	CRLC	Circulate
CLA	Clear type of ice formation	CRLN	Circulation
CLD	Cloud	CRNR	Corner
CLDNS	Cloudiness	CRNRS	Corners
CLDS	Clouds	CRS	Course
CLKWS	Clockwise	CS	Cirrostratus
CLR	Clear(s) or cleared to...or clearance	CSDR	Consider
CLRG	Clearing	CSDRBL	Considerable
CLRS	Clears	CST	Coast
CLSD	Close or closed or closing	CSTL	Coastal
CM	Centimeter	CT	Connecticut
CMPLX	Complex	CTSKLS	Catskills
CNL	Cancel or cancelled	CU	Cumulus
CNDN	Canadian	CUFRA	Cumulus Fractus
CNTR	Center	COV	Cover or covered or covering
CNTRD	Centered	CWSU	Center Weather Service Unit
CNTRL	Central		

CYC	Cyclonic	DMG	Damage
CYCLGN	Cyclogenesis	DMGD	Damaged
		DMGG	Damaging
		DMNT	Dominant
		DMSH	Diminish
		DMSHD	Diminished
		DMSHG	Diminishing
		DMSHS	Diminishes
D		DNG	Danger or dangerous
D	Downward (tendency in RVR during previous 10 minutes)	DNS	Dense
DABRK	Daybreak	DNSLP	Downslope
DALGT	Daylight	DNSTRM	Downstream
DBL	Double	DNWND	Downwind
DC	District of Columbia	DOM	Domestic
DCR	Decrease	DP	Dew point temperature
DCRD	Decreased	DPND	Deepened
DCRG	Decreasing	DPNG	Deepening
DCRGLY	Decreasingly	DPNS	Depends
DCRS	Decreases	DPR	Deeper
DE	Delaware or from (used to precede the call sign of the calling station) (to be used in AFS as a procedure signal)	DPT	Depth
		DR...	Low drifting (followed by DU =dust, SA = sand or SN = snow)
DEC	December	DRFT	Drift
DEG	Degrees	DRFTD	Drifted
DELMARVA	Delaware-Maryland-Virginia	DRFTG	Drifting
DFCLT	Difficult	DRFTS	Drift
DFCLTY	Difficulty	DRG	During
DFNT	Definite	DS	Duststorm
DFNTLY	Definitely	DSCNT	Descent
DFRS	Differs	DSIPT	Dissipate
DGNL	Diagonal	DSIPTD	Dissipated
DGNLLY	Diagonally	DSIPTG	Dissipating
DIF	Diffuse	DSIPTN	Dissipation
DIGG	Digging	DSIPTS	Dissipates
DIR	Direction	DSND	Descend
DISC	Discontinue	DSNDG	Descending
DISCD	Discontinued	DSNDS	Descends
DISCG	Discontinuing	DSNT	Distant
DISRE	Disregard	DSTBLZ	Destabilize
DISRED	Disregarded	DSTBLZD	Destabilized
DISREG	Disregarding	DSTBLZG	Destabilizing
DIST	Distance	DSTBLZS	Destabilizes
DKTS	Dakotas	DSTBLZN	Destabilization
DLA	Delay or delayed or delay (message type designator)	DTG	Date-time group
DLT	Delete	DTRT	Deteriorate or deteriorating
DLTD	Deleted	DU	Dust
DLTG	Deleting	DUC	Dense upper cloud
DLY	Daily	DUR	Duration
		DURC	During climb

DURD	During descent	ESERN	East-southeastern
DVLP	Develop	ESEWD	East-southeastward
DVLPD	Developed	ESNTL	Essential
DVLPG	Developing	ESTAB	Establish
DVLPMT	Development	EST	Estimate or estimated or estimate (message type designator)
DVLPS	Develops	ETA	Estimated time of arrival or estimating arrival
DVRG	Diverge	ETC	Et cetera
DVRGG	Diverging	ETD	Estimated time of departure or estimating departure
DVRGNC	Divergence	ETIM	Elapsed time
DVRGS	Diverges	EV	Every
DVV	Downward vertical velocity	EVE	Evening
DWNDFTS	Downdrafts	EWD	Eastward
DZ	Drizzle	EXCLV	Exclusive
		EXCLVLY	Exclusively
E		EXC	Except
E	East or eastern longitude	EXP	Expect or expected or expecting
EB	Eastbound	EXTD	Extend or extending
EFCT	Effect	EXTRAP	Extrapolate
ELEV	Elevation	EXTRAPD	Extrapolated
ELNGT	Elongate	EXTRM	Extreme
ELNGTD	Elongated	EXTRMLY	Extremely
ELSW	Elsewhere	EXTSV	Extensive
EMBD	Embedded in a layer (to indicate cumulonimbus embedded in layers of clouds)		
EMC	Environmental Modeling Center	F	
EMERG	Emergency	F	Degrees Fahrenheit or fixed
ENCTR	Encounter	FA	Area Forecast (U.S. domestic)
ENDG	Ending	FAA	Federal Aviation Administration
ENE	East-northeast	FAM	Familiar
ENEPLY	East-northeasterly	FAX	Facsimile transmission
ENERN	East-northeastern	FBL	Light (used to indicate the intensity of weather phenomena, interference or static reports, e.g. FBL RA = light rains)
ENEWD	East-northeastward		
ENHNC	Enhance		
ENHNCD	Enhanced		
ENHNCG	Enhancing		
ENHNCS	Enhances		
ENHNCMNT	Enhancement		
ENR	En route	FC	Funnel cloud (tornado or waterspout)
ENTR	Entire	FCST	Forecast
EQPT	Equipment	FEB	February
ERN	Eastern	FEW	Few
ERY	Early	FG	Fog
ERYR	Earlier	FIG	Figure
ESE	East-southeast		
ESELY	East-southeasterly		

FILG	Filling		
FIR	Flight information region	G	Gust or green
FIRAV	First available	GA	Georgia
FL	Florida or Flight Level	GAMET	Area forecast for low level flights
FLD	Field	GEN	General
FLRY	Flurry	GENLY	Generally
FLRYS	Flurries	GEO	Geographic or true
FLT	Flight	GEOREF	Geographical reference
FLUC	Fluctuating or fluctuation or fluctuated	GFS	Global Forecast System (model)
FLW	Follow(s) or following	GLFALSK	Gulf of Alaska
FLY	Fly or flying	GLFCAL	Gulf of California
FM	From	GLFMEX	Gulf of Mexico
FM...	From (followed by time weather change is forecast to begin)	GLFSTLAWR	Gulf of St. Lawrence
FMT	Format	GND	Ground
FNCTN	Function	GR	Hail
FNTGNS	Frontogenesis	GRAD	Gradient
FNTLYS	Frontolysis	GRDL	Gradual
FORNN	Forenoon	GRDLY	Gradually
FPM	Feet per minute	GRIB	Processed meteorological data in the form of grid point values expressed in binary form (aeronautical meteorological code)
FQTLY	Frequently		
FRI	Friday	GRT	Great
FRM	Form	GRTLY	Greatly
FRMG	Forming	GRTLKS	Great Lakes
FRMN	Formation	GS	Small hail and/or snow pellets
FRNG	Firing	GSTS	Gusts
FRONT	Front (relating to weather)	GSTY	Gusty
FROPA	Frontal passage	GTS	Global Telecommunication System
FROSFC	Frontal surface		
FRQ	Frequent		
FRST	Frost		
FRWF	Forecast wind factor		
FSS	Flight Service Station		
FST	First		
FT	Feet (dimensional unit)	H	
FTHR	Further		
FU	Smoke	HAZ	Hazard
FVRBL	Favorable	HDFRZ	Hard freeze
FWD	Forward	HDSVLY	Hudson Valley
FYI	For your information	HDWND	Head wind
FZ	Freezing	HGT	Height
FZ LVL	Freezing level	HI	Hawaii or high
FZDZ	Freezing drizzle	HIFOR	High level forecast
FZFG	Freezing fog	HJ	Sunrise to sunset
FZRA	Freezing rain	HLDG	Holding
		HLF	Half
		HTLP	Hilltop
		HN	Sunset to sunrise

G

HND	Hundred	IMT	Immediate or immediately
HOL	Holiday	IMPT	Important
HPA	Hectopascal	INC	In cloud
HPC	Hydrometeorological Prediction Center	INCL	Include
HR	Hours	INCLG	Included
HRZN	Horizon	INCLS	Including
HTG	Heating	INCR	Includes
HURCN	Hurricane	INCRD	Increase
HUREP	Hurricane report	INCRG	Increased
HVY	Heavy or heavy (used to indicate the intensity of weather phenomena, e.g. heavy rain = HVY RA)	INCRGLY	Increasing
HVYR	Heavier	INCRS	Increasingly
HVYST	Heaviest	INDC	Increases
HWVR	However	INDEF	Indicate
HWY	Highway	INFO	Indicated
HYR	Higher	INOP	Indicating
HZ	Haze	INPR	Indicates
I			
IA	Iowa	INSTBY	Indefinite
IAO	In and out of clouds	INTCNTL	Information
IC	Icing (PIREPs only) or ice crystals (very small ice crystals in suspension, also known as diamond dust)	INTL	Indoor
ICAO	International Civil Aviation Organization	INTMD	Indoor
ICE	Icing	INTMT	Indoor
ICGIC	Icing in clouds	INTMTLY	Indoor
ICGICIP	Icing in clouds and in precipitation	INTR	Interior
ICGIP	Icing in precipitation	INTRP	Interrupt or interruption or interrupted
ID	Idaho or identifier or identity	INTRMTRGN	Intermountain region
IDENT	Identification	INT	Intersection
IFR	Instrument flight rules	INTS	Intense
IGA	International general aviation	INTSFNCN	Intensification
IL	Illinois	INTSF	Intensify or intensifying
ILS	Instrument landing system	INTST	Intensity
IMC	Instrument meteorological conditions	INTVL	Interval
IMD	Immediate or immediately	INVRN	Inversion
IMPL	Impulse	IOVC	In overcast
IMPLS	Impulses	INVOF	In vicinity of
IMPR	Improve or improving	IPV	Improve
		IPVG	Improving
		ISA	International standard atmosphere
		ISOL	Isolated
J			
		JAN	January

JCTN	Junction	LRGST	Largest
JTST	Jet stream	LST	Local standard time
JUL	July	LTD	Limited
JUN	June	LTG	Lightning
		LTGCC	Lightning cloud-to-cloud
		LTGCG	Lightning cloud-to-ground
		LTGCCCCG	Lightning cloud-to-cloud, cloud-to-ground
K			
KFRST	Killing frost	LTGCW	Lightning cloud-to-water
KG	Kilograms	LTGIC	Lightning in cloud
KLYR	Smoke layer aloft	LTL	Little
KM	Kilometers	LTLCG	Little change
KMH	Kilometers per hour	LTR	Later
KOCTY	Smoke over city	LTST	Latest
KPA	Kilopascals	LV	Light and variable (relating to wind)
KS	Kansas	LVE	Leave or Leaving
KT	Knots	LVL	Level
KY	Kentucky	LWR	Lower
		LWRD	Lowered
		LWRG	Lowering
		LRY	Layer or layered
L			
L	Left (runway identification)		
LA	Louisiana	M	
LABRDR	Labrador		
LAN	Inland	M	Meters (preceded by figures) or Mach number (followed by figures)
LAT	Latitude	MA	Massachusetts
LAWRS	Limited aviation weather reporting station	MAG	Magnetic
LCTMP	Little change in temperature	MAINT	Maintenance
LFTG	Lifting	MAN	Manitoba
LGT	Light or lightning	MAR	March
LGWV	Long wave	MAX	Maximum
LI	Lifted Index	MAY	May
LIS	Lifted indices	MB	Millibar
LK	Lake	MBST	Microburst
LKS	Lakes	MCD	Mesoscale discussion
LKLY	Likely	MD	Maryland
LLJ	Low level jet	MDFY	Modify
LLWAS	Low-level wind shear alert system	MDFYD	Modified
LLWS	Low-level wind shear	MDFYG	Modifying
LN	Line	MDL	Model
LOC	Local or locally or location or located	MDLS	Models
LONG	Longitude	MDTLY	Moderately
LONGL	Longitudinal	ME	Maine
LRG	Long range	MED	Medium
LRGLY	Largely	MEGG	Merging
LRGR	Larger	MESO	Mesoscale

MET	Meteorological or meteorology	MTW	Mountain waves
METAR	Aviation routine weather report (in aeronautical meteorological code)	MULT	Multiple
		MULTILVL	Multilevel
		MWO	Meteorological watch office
		MX	Mixed type of ice formation (white and clear)
METRO	Metropolitan		
MEX	Mexico		
MHKVLY	Mohawk Valley		
MI	Michigan	N	
MID	Mid-point (related to RVR)		
MIDN	Midnight	N	North or northern latitude or no distinct tendency (in RVR during previous 10 minutes)
MIFG	Shallow fog	NAB	Not above
MIL	Military	NAM	North American Mesoscale (model)
MIN	Minutes	NAT	North Atlantic
MISG	Missing	NAV	Navigation
MLTLVL	Melting level	NB	New Brunswick or northbound
MN	Minnesota	NBFR	Not before
MNLD	Mainland	NBRHD	Neighborhood
MNM	Minimum	NC	North Carolina or no change
MNLY	Mainly	NCEP	National Center of Environmental Prediction
MNT	Monitor or monitoring or monitored	NCO	NCEP Central Operations
MNTN	Maintain	NCWX	No change in weather
MO	Missouri	ND	North Dakota
MOD	Moderate (used to indicate the intensity of weather phenomena, interference or static reports, e.g. moderate rain = MOD RA)	NE	Nebraska or northeast
		NEB	Northeast bound
MOGR	Moderate or greater	NEC	Necessary
MON	Monday or above	NEG	No or negative or permission not granted or that is not correct
	mountains	NEGLY	Negatively
MOPS	Minimum operational performance standards	NELY	Northeasterly
MOV	Move or moving or movement	NERN	Northeastern
MPH	Miles per hour	NEWD	Northeastward
MPS	Meters per second	NEW ENG	New England
MRG	Medium range	NFLD	Newfoundland
MRGL	Marginal	NGT	Night
MRGLLY	Marginally	NH	New Hampshire
MRNG	Morning	NHC	National Hurricane Center
MRTM	Maritime	NIL	None or I have nothing to send to you
MS	Mississippi or minus	NJ	New Jersey
MSG	Message	NL	No layers
MSL	Mean sea level	NLT	Not later than
MST	Most		
MSTLY	Mostly		
MSTR	Moisture		
MT	Montana or mountain		

NLY	Northerly		observation
NM	New Mexico or nautical miles	OBSC	Obscure or obscured or obscuring
NMBRS	Numbers	OCFNT	Occluded front
NML	Normal	OCLD	Occlude
NMRS	Numerous	OCLDS	Occludes
NNE	North-northeast	OCLDD	Occluded
NNELY	North-northeasterly	OCLDG	Occluding
NNERN	North-northeastern	OCLN	Occlusion
NNEWD	North-northeastward	OCNL	Occasional or occasionally
NNW	North-northwest	OCR	Occur
NNWLY	North-northwesterly	OCRD	Occurred
NNWRN	North-northwestern	OCRG	Occurring
NNWWD	North-northwestward	OCRS	Occurs
NNNN	End of message	OCT	October
NOAA	National Oceanic and Atmospheric Administration	OFC	Office
NOPAC	Northern Pacific	OPF	Occluded frontal passage
NOSIG	No significant change (used in trend-type landing forecasts)	OFSHR	Offshore
NOV	November	OH	Ohio
NPRS	Non-persistent	OHD	Overhead
NR	Number	OK	Oklahoma or we agree or it is correct
NRLY	Nearly	OMTNS	Over mountains
NRN	Northern	ONSHR	On shore
NRW	Narrow	OPA	Opaque, white type of ice formation
NS	Nova Scotia or nimbostratus	OPC	Ocean Prediction Center
NSC	Nil significant cloud	OPN	Open or opening or opened
NSW	Nil significant weather	OPR	Operator or operate or operative or operating or operational
NTFY	Notify	OR	Oregon
NTFYD	Notified	ORGPHC	Orographic
NTL	National	ORIG	Original
NV	Nevada	OSV	Ocean station vessel
NVA	Negative vorticity advection	OTLK	Outlook (used in SIGMET messages for volcanic ash and tropical cyclones)
NW	Northwest	OTP	On top
NWB	Northwest bound	OTR	Other
NWD	Northward	OTRW	Otherwise
NWLY	Northwesterly	OUBD	Outbound
NWRN	Northwestern	OUTFLO	Outflow
NWS	National Weather Service	OVC	Overcast
NY	New York	OVNGT	Overnight
NXT	Next	OVR	Over
O			
OAT	Outside air temperature	OVRN	Overrun
OBS	Observe or observed or	OVRNG	Overrunning
		OVTK	Overtake
		OVTKG	Overtaking

OVTKS	Overtakes		covered by fog
P			
PA	Pennsylvania	PRI	Primary
PAC	Pacific	PRIN	Principal
PATWAS	Pilot's automatic telephone weather answering service	PRIND	Present indications are
PBL	Planetary boundary layer	PRJMP	Pressure jump
PCPN	Precipitation	PROB	Probability
PD	Period	PROC	Procedure
PDMT	Predominant	PROD	Produce
PEN	Peninsula	PRODG	Producing
PERM	Permanent	PROG	Forecast
PGTSND	Puget Sound	PROGD	Forecasted
PHYS	Physical	PROGS	Forecasts
PIBAL	Pilot balloon observation	PRSNT	Present
PIREP	Pilot weather report	PRSNTLY	Presently
PL	Ice pellets	PRST	Persist
PLNS	Plains	PRSTS	Persists
PLS	Please	PRSTNC	Persistence
PLTO	Plateau	PRSTNT	Persistent
PLVL	Present level	PRVD	Provide
PM	Postmeridian	PRVDD	Provided
PNHDL	Panhandle	PRVDG	Providing
PO	Dust/sand whirls (dust devils)	PRVDS	Provides
POS	Positive	PS	Plus
POSLY	Positively	PSG	Passing
POSS	Possible	PSN	Position
PPI	Plan position indicator	PSND	Positioned
PPINA	Plan position indicator not available (U.S. Weather Radar Report)	PSR	Primary surveillance radar
PPINE	Plan position indicator no echoes (U.S. Weather Radar Report)	PTCHY	Patchy
PPSN	Present position	PTLY	Partly
PRBL	Probable	PTNL	Potential
PRBLY	Probably	PTNLY	Potentially
PRBLTY	Probability	PTNS	Portions
PRECD	Precede	PUGET	Puget Sound
PRECDD	Preceded	PVA	Positive vorticity advection
PRECDG	Preceding	PVL	Prevail
PRECDS	Precedes	PVLD	Prevailed
PRES	Pressure	PVLG	Prevailing
PRESFR	Pressure falling rapidly	PVLS	Prevails
PRESRR	Pressure rising rapidly	PVLT	Prevalent
PRFG	Aerodrome partially	PWB	Pilot weather briefing
		PWR	Power
		Q	
		QFE	Atmospheric pressure at aerodrome elevation
		QN	Question

QNH	<u>Altimeter</u> sub-scale setting to obtain elevation when on the ground	RH	Relative humidity
QSTNRY	Quasistationary	RI	Rhode Island
QTR	Quarter	RITE	Right (direction of turn)
QUAD	Quadrant	RIOGD	Rio Grande
QUE	Quebec	RLBL	Reliable
R			
R	Right (runway identification) or rain (U.S. Weather Radar Reports)	RLTV	Relative
RA	Rain	RLTVLY	Relatively
RADAT	Radiosonde additional data	RMK	Remark
RAFC	Regional area forecast centre	RMN	Remain
RAG	Ragged	RMND	Remained
RAOB	Radiosonde observation	RMNDR	Remainder
RCH	Reach or reaching	RMNG	Remaining
RCKY	Rocky	RMNS	Remains
RCKYS	Rockies	RNFL	Rainfall
RCMD	Recommend	ROFOR	Route forecast (in aeronautical meteorological code)
RCMDD	Recommended	ROT	Rotate
RCMDG	Recommending	ROTD	Rotated
RCMDS	Recommends	ROTG	Rotating
RCRD	Record	ROTS	Rotates
RCRDS	Records	RPD	Rapid
RDC	Reduce	RPDLY	Rapidly
RDGG	Ridging	RPLC	Replace or replaced
RDL	Radial	RPT	Repeat or I repeat (to be used in AFS as a procedure signal)
RDVLP	Redevelop	RPTG	Repeating
RDVLPG	Redeveloping	RPTS	Repeats
RDVLPMT	Redevelopment	RQMNTS	Requirements
RE...	Recent (used to qualify weather phenomena, e.g. RERA = recent rain)	RQR	Require
REC	Receive or receiver	RQRD	Required
RECON	Reconnaissance	RQRG	Requiring
REF	Reference to...or refer to...	RQRS	Requires
REP	Report or reporting or reporting point	RRA	(or RRB, RRC...etc., in sequence) Delayed meteorological message (message type designator)
RES	Reserve	RSG	Rising
REQ	Request or requested	RSN	Reason
RESP	Response	RSNG	Reasoning
RESTR	Restrict	RSNS	Reasons
RGLR	Regular	RSTR	Restrict
RGN	Region	RSTRD	Restricted
RGNS	Regions	RSTRG	Restricting
		RSTRS	Restricts
		RTD	Delayed (used to indicate delayed meteorological message; message type designator)

RTE	Route	SEV	Severe (used to qualify icing and turbulence reports)
RTN	Return or returned or returning		
RTS	Return to service	SEWD	Southeastward
RUC	Rapid Update Cycle (model)	SFC	Surface
RUF	Rough	SG	Snow grains
RUFLY	Roughly	SGFNT	Significant
RVR	Runway visual range	SGFNTLY	Significantly
RVS	Revise	SH...	Showers (followed by RA = rain, SN = snow, PL = ice pellets, GR = hail, GS = small hail and/or snow pellets or combinations thereof, e.g. SHRASN = showers of rain and snow)
RVSD	Revised	SHFT	Shift
RVSG	Revising	SHFTD	Shifted
RVSS	Revises	SHFTG	Shifting
RWY	Runway	SHFTS	Shifts
S			
S	South or southern latitude	SHLD	Shield
SA	Sand	SHLW	Shallow
SAP	As soon as possible	SHRT	Short
SARPS	Standards and Recommended Practices (ICAO)	SHRTLY	Shortly
SASK	Saskatchewan	SHRTWV	Shortwave
SAT	Saturday	SHUD	Should
SATFY	Satisfactory	SIERNEV	Sierra Nevada
SB	Southbound	SIG	Signature
SBSD	Subside	SIGMET	Significant Meteorological Information (Information concerning en-route weather phenomena which may affect the safety of aircraft operations)
SBSDD	Subsided	SIGWX	Significant weather
SBSDNC	Subsidence	SIMUL	Simultaneous or simultaneously
SBSDS	Subsides	SKC	Sky clear
SC	South Carolina or stratocumulus	SKED	Schedule or scheduled
SCND	Second	SLD	Solid
SCSL	Stratocumulus Standing Lenticular	SLGT	Slight
SCT	Scattered	SLGTLY	Slightly
SD	South Dakota	SLP	Slope
SE	Southeast	SLPG	Sloping
SEB	Southeast bound	SLW	Slow
SEC	Seconds	SLY	Southerly
SECT	Sector	SM	Statute mile
SELY	Southeasterly	SML	Small
SEP	September	SMLR	Smaller
SEPN	Separation	SMRY	Summary
SEQ	Sequence	SMTH	Smooth
SER	Service or servicing or served		
SERN	Southeastern		

SMTHR	Smoother	STBLTY	Stability
SMTHST	Smoothest	STD	Standard
SMTM	Sometime	STDY	Steady
SMWHT	Somewhat	STFR	Stratus Fractus
SN	Snow	STF	Stratiform
SNBNK	Snow bank	STG	Strong
SNFLK	Snowflake	STGLY	Strongly
SNGL	Single	STGR	Stronger
SNOINCR	Snow increase	STGST	Strongest
SNOINCRG	Snow increasing	STM	Storm
SOP	Standard operating procedure	STMS	Storms
SPC	Storm Prediction Center	STN	Station
SPCLY	Especially	STNR	Stationary
SPD	Speed	STS	Status
SPECI	Aviation selected special weather Report (in aeronautical meteorological code)	SUBTRPCL	Subtropical
SPECIAL	Special meteorological report (in abbreviated plain language)	SUF	Sufficient
SPKL	Sprinkle	SUFLY	Sufficiently
SPLNS	Southern Plains	SUG	Suggest
SPRD	Spread	SUGG	Suggesting
SPRDG	Spreading	SUGS	Suggests
SPRDS	Spreads	SUN	Sunday
SPRL	Spiral	SUPG	Supplying
SQ	Squall	SUPR	Superior
SQL	Squall line	SUPSD	Supersede
SR	Sunrise	SUPSDG	Superseding
SRG	Short range	SUPSDS	Supersedes
SRN	Southern	SVC	Service message
SRND	Surround	SVRL	Several
SRNDD	Surrounded	SW	Southwest
SRNDG	Surrounding	SWB	Southwest bound
SRNDS	Surrounds	SWD	Southward
SRY	Secondary	SWWD	Southwestward
SS	Sunset or sandstorm	SWLY	Southwesterly
SSE	South-southeast	SWRN	Southwestern
SSELY	South-southeasterly	SX	Stability index
SSERN	South-southeastern	SXN	Section
SSEWD	South-southeastward	SYNOP	Synoptic
SSW	South-southwest	SYNS	Synopsis
SSWLY	South-southwesterly	SYS	System
SSWRN	South-southwestern	T	
SSWWD	South-southwestward	TAF	Temperature
ST	Stratus	TAIL	Terminal aerodrome forecast
STAGN	Stagnation	TB	Tail wind
STBL	Stable	TC	Turbulence (PIREPs only)
			Tropical Cyclone

TCNTL	Transcontinental	TRMTS	Terminates
TCU	Towering cumulus	TRNSP	Transport
TDA	Today	TRNSPG	Transporting
TDO	Tornado	TROF	Trough
TEMPO	Temporary or temporarily	TROFS	Troughs
TEND	Trend forecast	TROP	Tropopause
THK	Thick	TRPCD	Tropical continental air mass
THKNG	Thickening	TRPCL	Tropical
THKNS	Thickness	TRRN	Terrain
THKR	Thicker	TRSN	Transition
THKST	Thickest	TS	Thunderstorm (in aerodrome reports and forecasts, TS used alone means thunder heard but no precipitation at the aerodrome)
THN	Thin	TS...	Thunderstorm (followed by RA = rain, SN = snow, PL = ice pellets, GR = hail, GS = small hail and/or snow pellets or combinations thereof, e.g. TSRASN = thunderstorm with rain and snow)
THNG	Thinning	TSFR	Transfer
THNR	Thinner	TSFRD	Transferred
THNST	Thinnest	TSFRG	Transferring
THR	Threshold	TSFRS	Transfers
THRFTR	Thereafter	TSNT	Transient
THRU	Through	TUE	Tuesday
THRUT	Throughout	TURB	Turbulence
THSD	Thousand	TURBT	Turbulent
THTN	Threaten	TWD	Toward
THTND	Threatened	TWDS	Towards
THTNG	Threatening	TWI	Twilight
THTNS	Threatens	TWR	Aerodrome control tower or aerodrome control
THU	Thursday	TWRG	Towering
TIL	Until	TX	Texas
TL...	Till (followed by time by which weather change is forecast to end)	TYP	Type of aircraft
TMW	Tomorrow	TYPH	Typhoon
TN	Tennessee		
TNDCY	Tendency		
TNDCYS	Tendencies		
TNGT	Tonight		
TNTV	Tentative		
TNTVLY	Tentatively		
TO	To...(place)		
TOC	Top of climb		
TOP	Cloud top		
TOPS	Tops		
TOVC	Top of overcast		
TPC	Tropical Prediction Center		
TPG	Topping		
TR	Track		
TRBL	Trouble		
TRIB	Tributary		
TRKG	Tracking		
TRML	Terminal	U	Upward (tendency in RVR during previous 10 minutes)
TRMT	Terminate		
TRMTD	Terminated	UA	Pilot weather report (U.S.)
TRMTG	Terminating	UDDF	Up- and downdrafts
			U

UFN	Until further notice	VFYD	Verified
UNA	Unable	VFGY	Verifying
UNAVBL	Unavailable	VFYS	Verifies
UNEC	Unnecessary	VIS	Visibility
UNKN	Unknown	VLCTY	Velocity
UNL	Unlimited	VLCTYS	Velocities
UNREL	Unreliable	VLNT	Violent
UNRSTD	Unrestricted	VLNTLY	Violently
UNSATFY	Unsatisfactory	VLY	Valley
UNSBL	Unseasonable	VMC	Visual meteorological conditions
UNSTBL	Unstable	VOL	Volume
UNSTDY	Unsteady	VOLMT	Meteorological information for aircraft in flight
UNSTL	Unsettle		
UNSTLD	Unsettled		
UNUSBL	Unusable	VORT	Vorticity
UPDFTS	Updrafts	VR	Veer
UPR	Upper	VRB	Variable
UPSLP	Upslope	VRG	Veering
UPSTRM	Upstream	VRISL	Vancouver Island, BC
URG	Urgent	VRS	Veers
USBL	Usable	VRT	Vertical motion
UT	Utah	VRY	Very
UTC	Coordinated Universal Time	VT	Vermont
UVV	Upward vertical velocity	VV	Vertical velocity
UWNDs	Upper winds		

V

VA	Virginia or volcanic ash	W	West or western longitude
VAAC	Volcanic Ash Advisory Center	WA	Washington
VAAS	Volcanic Ash Advisory Statement	WAFC	World area forecast centre
VAL	In valleys	WAFS	Word area forecast system
VARN	Variation	WB	Westbound
VC	Vicinity of the aerodrome (followed by FG = fog, FC = funnel cloud, SH = showers, PO = dust/sand whirls, BLDU = blowing dust, BLSA = blowing sand or BLSN = blowing snow, e.g. VC FG = vicinity fog)	WDI	Wind direction indicator
		WDLY	Widely
		WDSPR	Widespread
		WED	Wednesday
		WEF	With effect from or effective from
		WFO	Weather Forecast Office
		WFP	Warm front passage
		WI	Wisconsin or within
		WIBIS	Will be issued
VCOT	VFR conditions on top	WID	Width
VCTR	Vector	WIE	With immediate effect or effective immediately
VCY	Vicinity		
VER	Vertical	WINT	Winter
VFR	Visual flight rules	WINTEM	Forecast upper wind and temperature for aviation
VFY	Verify		

W

W	West or western longitude
WA	Washington
WAA	Warm air advection
WAFC	World area forecast centre
WAFS	Word area forecast system
WB	Westbound
WDI	Wind direction indicator
WDLY	Widely
WDSPR	Widespread
WED	Wednesday
WEF	With effect from or effective from
WFO	Weather Forecast Office
WFP	Warm front passage
WI	Wisconsin or within
WIBIS	Will be issued
WID	Width
WIE	With immediate effect or effective immediately
WINT	Winter
WINTEM	Forecast upper wind and temperature for aviation

WK	Weak	WY	Wyoming
WKDAY	Weekday		
WKEND	Weekend		
WKN	Weaken or weakening	X	
WL	Will		
WLY	Westerly	X	Cross
WND	Wind	XCP	Except
WNDS	Winds	XNG	Crossing
WNW	West-northwest	XPC	Expect
WNWLY	West-northwesterly	XPCD	Expected
WNWRN	West-northwestern	XPCG	Expecting
WNWWD	West-northwestward	XPCS	Expects
WO	Without	XPLOS	Explosive
WPLTO	Western Plateau	XS	Atmospherics
WRM	Warm	XTND	Extend
WRMG	Warming	XTNDD	Extended
WRN	Western	XTNDG	Extending
WRMR	Warmer	XTRM	Extreme
WRMST	Warmest	XTRMLY	Extremely
WRMFNT	Warm front		
WRMFNTL	Warm frontal		
WRNG	Warning	Y	
WRS	Worse		
WS	Wind shear		
WSPD	Wind speed	YDA	Yesterday
WSHFT	Wind shift	YKN	Yukon
WSTCH	Wasatch Range	YLSTN	Yellowstone
WSW	West-southwest	Z	
WSWLY	West-southwesterly		
WSWRN	West-southwestern		
WSWWD	West-southwestward		
WTR	Water	Z	Coordinated Universal Time (in meteorological messages)
WTSPT	Waterspout		
WUD	Would		
WV	West Virginia	ZN	Zone
WVS	Waves	ZNS	Zones
WW	Watch notification message		
WWD	Westward		
WWW	World wide web		
WX	Weather		

12 APPENDIX C: STANDARD CONVERSION CHART

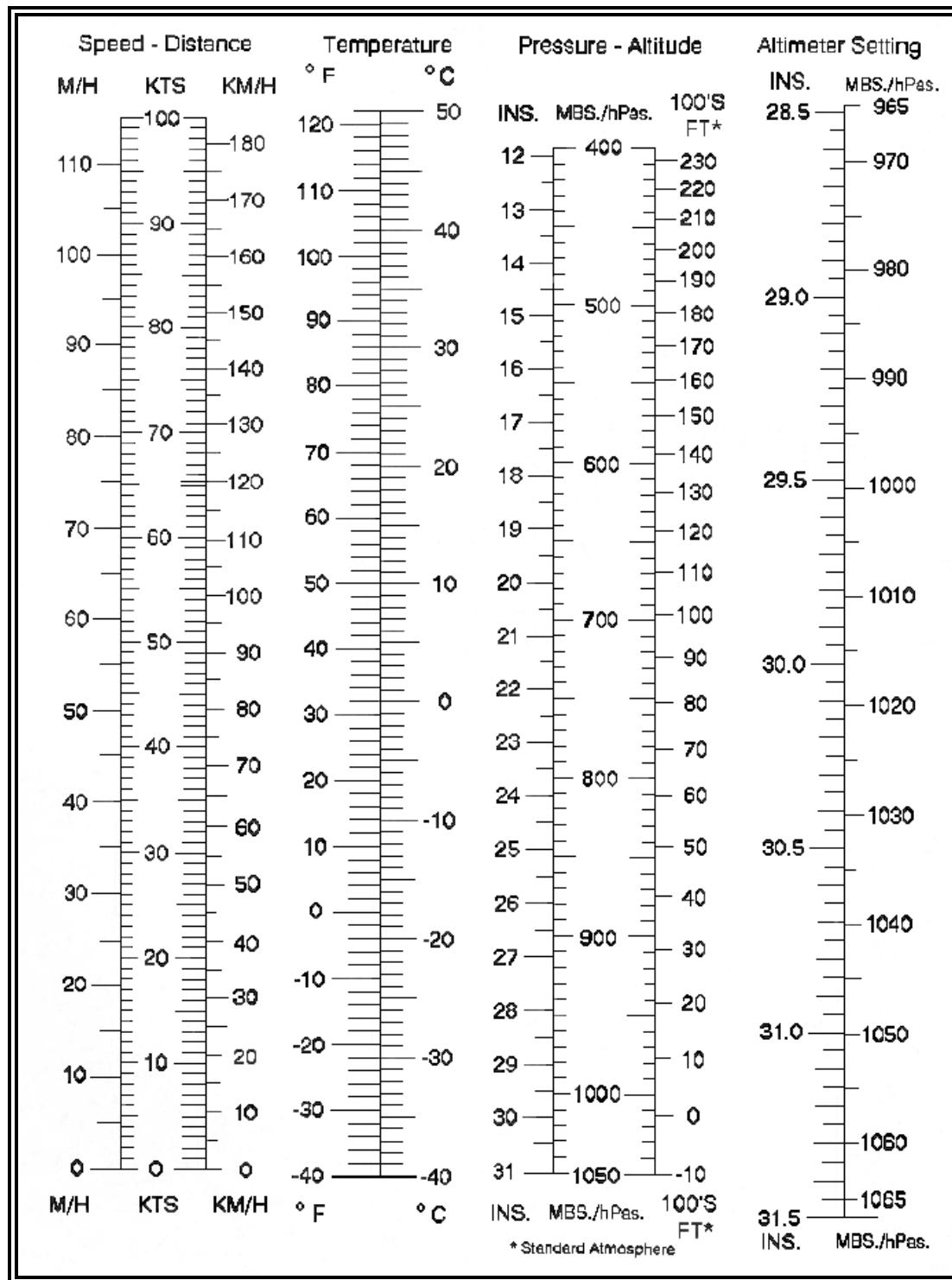


Figure C-1. Standard Conversion Chart

13 APPENDIX D: DENSITY ALTITUDE CALCULATION

To determine density altitude:

1. Set the aircraft's [altimeter](#) to 29.92 [inches of Mercury](#). The [altimeter](#) will indicate pressure altitude.
2. Read the outside air temperature.
3. Mark the intersection of pressure altitude (horizontal) and temperature (vertical) lines on the chart.
4. Read the density altitude from the diagonal lines.

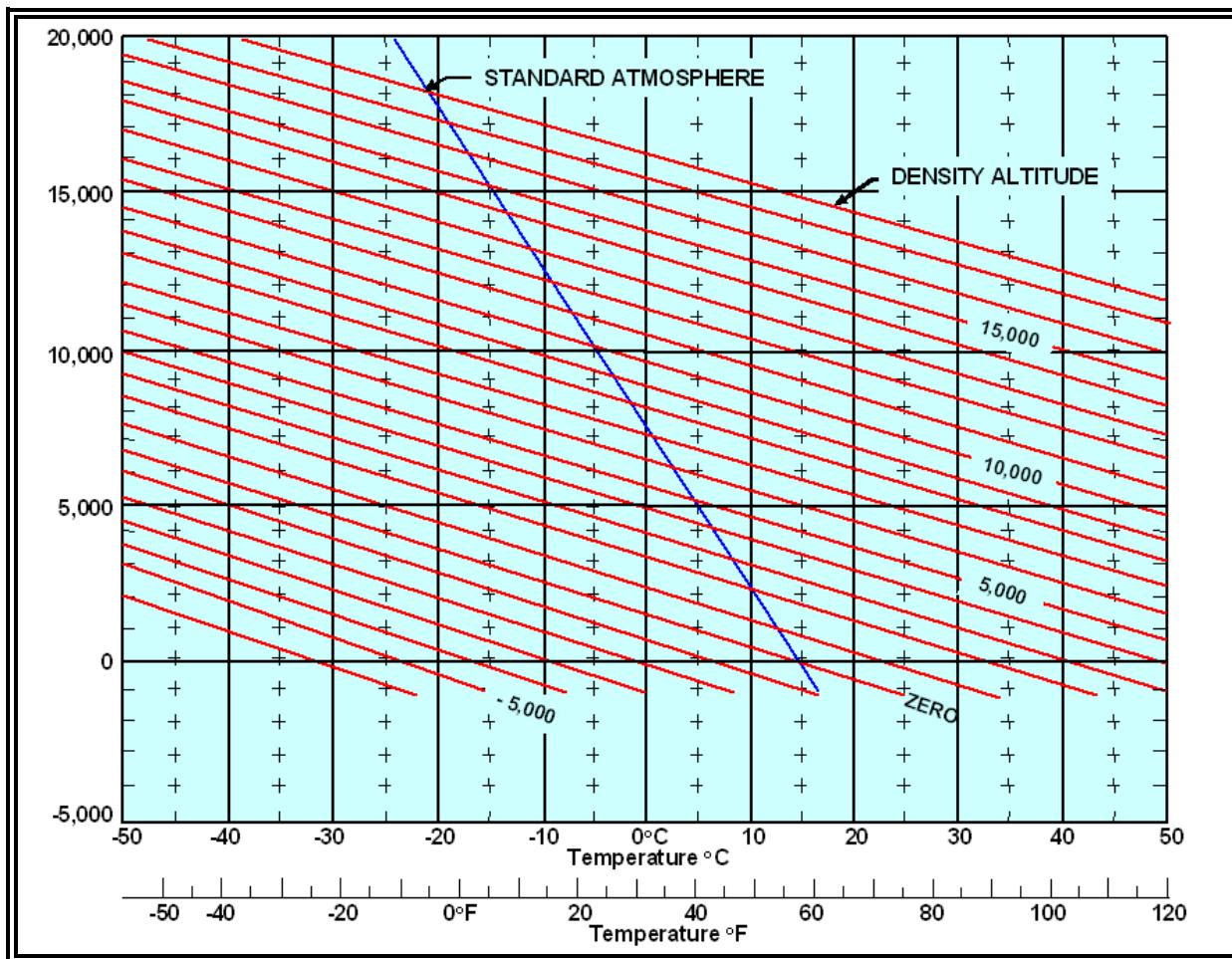


Figure D-1. Density Altitude Computation Chart

14 APPENDIX E: INTERNET LINKS

Table E-1. Selected National Weather Service (NWS) Links

SITE	WEB ADDRESS
National Weather Service (NWS)	http://weather.gov/
Aviation Digital Data Service (ADDS)	http://adds.aviationweather.noaa.gov/
Aviation Weather Center (AWC)	http://aviationweather.gov
Hydrometeorological Prediction Center (HPC)	http://www.hpc.ncep.noaa.gov/
Storm Prediction Center (SPC)	http://www.spc.noaa.gov/
Tropical Prediction Center (TPC)	http://www.nhc.noaa.gov/
Alaska Aviation Weather Unit (AAWU)	http://aawu.arh.noaa.gov/
Center Weather Service Units (CWSU)	http://aviationweather.gov/products/cwsu/
Weather Forecast Offices (WFO)	http://www.srh.noaa.gov/
Weather Forecast Office (WFO) Honolulu, HI – Aviation Products	http://www.prh.noaa.gov/hnl/pages/aviation.php
Telecommunication Operations Center - NWS Fax Charts	http://weather.noaa.gov/fax/nwsfax.html
NWS Office at the FAA Academy	http://www.srh.noaa.gov/faa/

Table E-2. Selected Federal Aviation Administration (FAA) Links

SITE	WEB ADDRESS
Federal Aviation Administration (FAA)	http://www.faa.gov/
Air Traffic Control System Command Center (ATCSCC)	http://www.fly.faa.gov/flyfaa/usmap.jsp
Automated Flight Service Station (AFSS)	http://fsfeedback.gosysops.info

Table E-3. Selected Links to Aviation Weather Products

PRODUCT	WEB ADDRESS
Average Surface to 500 MB Relative Humidity Chart	http://weather.noaa.gov/pub/fax/QRUA00.TIF
Collaborative Convective Weather Forecast (CCFP)	http://aviationweather.gov/products/ccfp/
Constant Pressure Charts	http://weather.noaa.gov/fax/barotrop.shtml
Convective Outlooks	http://www.spc.noaa.gov/products/outlook/
Current Icing Product (CIP)	http://adds.aviationweather.noaa.gov/icing/icing_nav.php
Center Weather Advisory (CWA)	http://aviationweather.gov/products/cwsu/
Area Forecast (FA)	http://aviationweather.gov/products/fa/
Significant Meteorological Advisory (SIGMET) – US (CONUS)	http://adds.aviationweather.noaa.gov/airmets/
Significant Meteorological Advisory (SIGMET) – International	http://aviationweather.gov/products/sigmets/intl/
Airmen's Meteorological Advisory (AIRMET)	http://adds.aviationweather.noaa.gov/airmets/
Forecast Icing Potential (FIP)	http://adds.aviationweather.noaa.gov/icing/icing_nav.php
Freezing Level Graphics	http://adds.aviationweather.noaa.gov/icing/frzg_nav.php
High Level SIGWX Charts	http://aviationweather.gov/products/swh/
Lifted Index (LI) Analysis Chart	http://weather.noaa.gov/pub/fax/QXUA00.TIF
Low Level SIGWX Charts	http://aviationweather.gov/products/swl/
Mid Level SIGWX Chart	http://aviationweather.gov/products/swm/
Meteorological Impact Statement (MIS)	http://aviationweather.gov/products/cwsu/
National Convective Weather Forecast (NCWF)	http://adds.aviationweather.noaa.gov/convection/java/ http://adds.aviationweather.noaa.gov/convection/java/?appletsize=large http://aviationweather.gov/products/ncwf/

PRODUCT	WEB ADDRESS
Pilot Weather Report	http://adds.aviationweather.noaa.gov/pireps/
Radar Summary Chart	http://weather.noaa.gov/pub/fax/QAU00.TIF
Aviation Routine Weather Report (METAR) / Aviation Selected Special Weather Report (SPECI)	http://adds.aviationweather.noaa.gov/metars/
Surface Analysis Charts	http://www.hpc.ncep.noaa.gov/html/sfc2.shtml http://www.hpc.ncep.noaa.gov/html/avnsfc.shtml http://www.opc.ncep.noaa.gov/ http://www.nhc.noaa.gov/marine_forecasts.shtml http://www.opc.ncep.noaa.gov/UA.shtml
Short Range Surface Prog Charts	http://adds.aviationweather.noaa.gov/progs/
Strike Probabilities of Tropical Cyclone Conditions (SPF)	http://www.nhc.noaa.gov/
Terminal Aerodrome Forecast (TAF)	http://adds.aviationweather.gov/tafs/
Aviation Tropical Cyclone Advisory (TCA)	http://www.nhc.noaa.gov/
Tropical Cyclone Public Advisory (TCP)	http://www.nhc.noaa.gov/
Volcanic Ash Advisory Statement (VAAS)	http://aviationweather.gov/iffdp/volt.shtml
Volcanic Ash Forecast Transport and Dispersion (VAFTAD) Chart	http://aviationweather.gov/iffdp/volc.shtml
Watch Notification Messages	http://www.spc.noaa.gov/products/watch/
Weather Depiction Chart	http://weather.noaa.gov/pub/fax/QGUA00.TIF
Wind and Temperature Aloft Forecast Graphics	http://adds.aviationweather.noaa.gov/winds/
Wind and Temperature Aloft Forecasts (FB) Text	http://aviationweather.gov/products/nws/winds/

15 APPENDIX F: AWC ADVISORY PLOTTING CHART

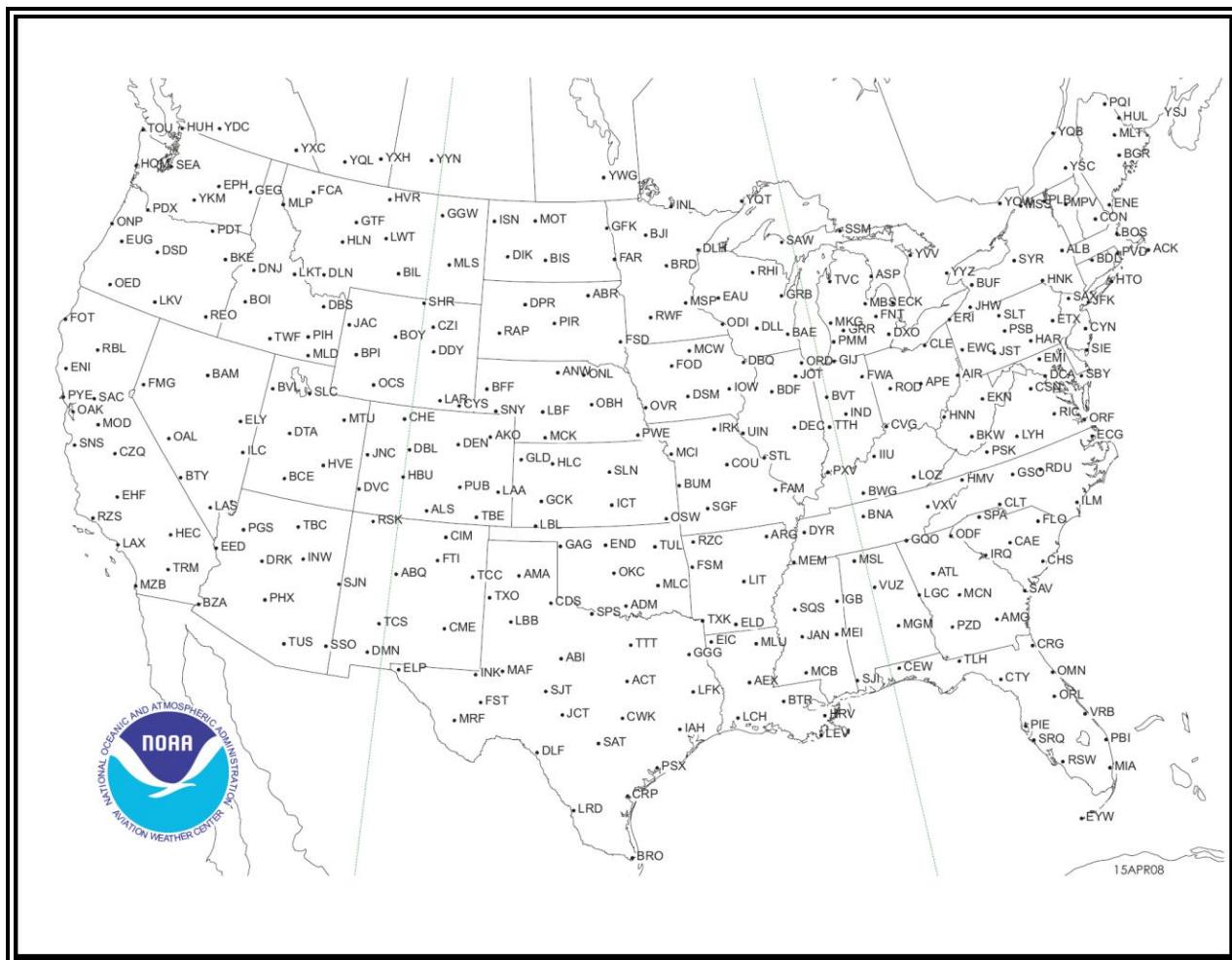


Figure F-1. AWC Advisory Plotting Chart

Table F-1. AWC Advisory Plotting Chart Reference Points

STATION ID	NAME	STATE	COUNTRY	LATITUDE (degrees)	LONGITUDE (degrees)
ABI	ABILENE	TX	US	32.48	-99.86
ABQ	ALBUQUERQUE	NM	US	35.04	-106.682
ABR	ABERDEEN	SD	US	45.42	-98.37
ACK	NANTUCKET	MA	US	41.28	-70.03
ACT	WACO	TX	US	31.66	-97.27
ADM	ARDMORE	OK	US	34.21	-97.17
AEX	ALEXANDRIA	LA	US	31.26	-92.50
AIR	BELLAIRE	OH	US	40.02	-80.82
AKO	AKRON	CO	US	40.16	-103.18
ALB	ALBANY	NY	US	42.75	-73.80
ALS	ALAMOSA	CO	US	37.35	-105.82
AMA	AMARILLO	TX	US	35.29	-101.64
AMG	ALMA	GA	US	31.54	-82.51
ANW	AINSWORTH	NE	US	42.57	-99.99
APE	APPLETON	OH	US	40.15	-82.59
ARG	WALNUT RIDGE	AR	US	36.11	-90.95
ASP	OSCODA	MI	US	44.45	-83.39
ATL	ATLANTA	GA	US	33.63	-84.44
BAE	MILWAUKEE	WI	US	43.12	-88.28
BAM	BATTLE MNTN	NV	US	40.57	-116.92
BCE	BRYCE CANYON	UT	US	37.69	-112.30
BDF	BRADFORD	IL	US	41.16	-89.59
BDL	WINSOR LOCKS	CT	US	41.94	-72.69
BFF	SCOTTSBLUFF	NE	US	41.89	-103.48
BGR	BANGOR	ME	US	44.84	-68.87
BIL	BILLINGS	MT	US	45.81	-108.63
BIS	BISMARCK	ND	US	46.77	-100.67
BJI	BEMIDJI	MN	US	47.58	-95.02
BKE	BAKER	OR	US	44.84	-117.81
BKW	BECKLEY	WV	US	37.78	-81.12
BNA	NASHVILLE	TN	US	36.14	-86.68
BOI	BOISE	ID	US	43.55	-116.19
BOS	BOSTON	MA	US	42.36	-70.99
BOY	BOYSEN RESV.	WY	US	43.46	-108.30
BPI	BIG PINEY	WY	US	42.58	-110.11
BRD	BRAINERD	MN	US	46.35	-94.03
BRO	BROWNSVILLE	TX	US	25.92	-97.38
BTR	BATON ROUGE	LA	US	30.48	-91.30
BTY	BEATTY	NV	US	36.80	-116.75
BUF	BUFFALO	NY	US	42.93	-78.65
BUM	BUTLER	MO	US	38.27	-94.49
BVL	BONNEVILLE	UT	US	40.73	-113.76
BVT	LAFAYETTE	IN	US	40.56	-87.07
BWG	BOWLING GREEN	KY	US	36.93	-86.44
BZA	YUMA	AZ	US	32.77	-114.60

STATION ID	NAME	STATE	COUNTRY	LATITUDE (degrees)	LONGITUDE (degrees)
CAE	COLUMBIA	SC	US	33.86	-81.05
CDS	CHILDRESS	TX	US	34.37	-100.28
CEW	CRESTVIEW	FL	US	30.83	-86.68
CHE	HAYDEN	CO	US	40.52	-107.31
CHS	CHARLESTON	SC	US	32.89	-80.04
CIM	CIMARRON	NM	US	36.49	-104.87
CLE	CLEVELAND	OH	US	41.42	-81.85
CLT	CHARLOTTE	NC	US	35.22	-80.93
CME	CHISUM	NM	US	33.34	-104.62
CON	CONCORD	NH	US	43.22	-71.58
COU	COLUMBIA	MO	US	38.82	-92.22
CRG	JACKSONVILLE	FL	US	30.34	-81.51
CRP	CORPUS CHRISTI	TX	US	27.90	-97.45
CSN	CASSANOVA	VA	US	38.64	-77.87
CTY	CROSS CITY	FL	US	29.60	-83.05
CVG	COVINGTON	KY	US	39.02	-84.70
CWK	CENTEX	TX	US	30.38	-97.53
CYN	COYLE	NJ	US	39.82	-74.43
CYS	CHEYENNE	WY	US	41.21	-104.77
CZI	CRAZY WOMAN	WY	US	44.00	-106.44
CZQ	FRESNO	CA	US	36.88	-119.82
DBL	EAGLE	CO	US	39.44	-106.90
DBQ	DUBUQUE	IA	US	42.40	-90.71
DBS	DUBOIS	ID	US	44.09	-112.21
DCA	WASHINGTON	DC	US	38.86	-77.04
DDY	CASPER	WY	US	43.09	-106.28
DEC	DECATUR	IL	US	39.74	-88.86
DEN	DENVER	CO	US	39.81	-104.66
DIK	DICKINSIN	ND	US	46.86	-102.77
DLF	LAUGHLIN AFB	TX	US	29.36	-100.77
DLH	DULUTH	MN	US	46.80	-92.20
DLL	DELLS	WI	US	43.55	-89.76
DLN	DILLON	MT	US	45.25	-112.55
DMN	DEMING	NM	US	32.28	-107.60
DNJ	MC CALL	ID	US	44.77	-116.21
DPR	DUPREE	SD	US	45.08	-101.72
DRK	PREScott	AZ	US	34.70	-112.48
DSD	REDMOND	OR	US	44.25	-121.30
DSM	DES MOINES	IA	US	41.44	-93.65
DTA	DELTA	UT	US	39.30	-112.51
DVC	DOVE CREEK	CO	US	37.81	-108.93
DXO	DETROIT	MI	US	42.21	-83.37
DYR	DYERSBURG	TN	US	36.02	-89.32
EAU	EAU CLAIRE	WI	US	44.90	-91.48
ECG	ELIZABETH CITY	NC	US	36.25	-76.18
ECK	PECK	MI	US	43.26	-82.72
EED	NEEDLES	CA	US	34.77	-114.47

STATION ID	NAME	STATE	COUNTRY	LATITUDE (degrees)	LONGITUDE (degrees)
EHF	BAKERSFIELD	CA	US	35.48	-119.10
EIC	SHREVEPORT	LA	US	32.77	-93.81
EKN	ELKINS	WV	US	38.92	-80.10
ELD	EL DORADO	AR	US	33.26	-92.74
ELP	EL PASO	TX	US	31.82	-106.28
ELY	ELY	NV	US	39.30	-114.85
EMI	WESTMINSTER	MD	US	39.50	-76.98
END	VANCE AFB	OK	US	36.35	-97.92
ENE	KENNEBUNK	ME	US	43.43	-70.61
ENI	UKIAH	CA	US	39.05	-123.27
EPH	EPHRATA	WA	US	47.38	-119.42
ERI	ERIE	PA	US	42.02	-80.30
ETX	EAST TEXAS	PA	US	40.58	-75.68
EUG	EUGENE	OR	US	44.12	-123.22
EWC	ELLWOOD CITY	PA	US	40.83	-80.21
EYW	KEY WEST	FL	US	24.59	-81.80
FAM	FARMINGTON	MO	US	37.67	-90.23
FAR	FARGO	ND	US	46.75	-96.85
FCA	KALISPELL	MT	US	48.21	-114.18
FLO	FLORENCE	SC	US	34.23	-79.66
FMG	RENO	NV	US	39.53	-119.66
FNT	FLINT	MI	US	42.97	-83.74
FOD	FT DODGE	IA	US	42.61	-94.29
FOT	FORTUNA	CA	US	40.67	-124.23
FSD	SIOUX FALLS	SD	US	43.65	-96.78
FSM	FT SMITH	AR	US	35.38	-94.27
FST	FT STOCKTON	TX	US	30.95	-102.98
FTI	FT UNION	NM	US	35.66	-105.14
FWA	FT WAYNE	IN	US	40.98	-85.19
GAG	GAGE	OK	US	36.34	-99.88
GCK	GARDEN CITY	KS	US	37.92	-100.73
GEG	SPOKANE	WA	US	47.56	-117.63
GFK	GRAND FORKS	ND	US	47.95	-97.19
GGG	LONGVIEW	TX	US	32.42	-94.75
GGW	GLASGOW	MT	US	48.22	-106.63
GIJ	NILES	MI	US	41.77	-86.32
GLD	GOODLAND	KS	US	39.39	-101.69
GQO	CHATTANOOGA	TN	US	34.96	-85.15
GRB	GREEN BAY	WI	US	44.56	-88.19
GRR	GRAND RAPIDS	MI	US	42.79	-85.50
GSO	GREENSBORO	NC	US	36.05	-79.98
GTF	GREAT FALLS	MT	US	47.45	-111.41
HAR	HARRISBURG	PA	US	40.23	-77.02
HBU	GUNNISON	CO	US	38.45	-107.04
HEC	HECTOR	CA	US	34.80	-116.46
HLC	HILL CITY	KS	US	39.26	-100.23
HLN	HELENA	MT	US	46.61	-111.95

STATION ID	NAME	STATE	COUNTRY	LATITUDE (degrees)	LONGITUDE (degrees)
HMV	HOLSTON MNTN	TN	US	36.44	-82.13
HNK	HANCOCK	NY	US	42.06	-75.32
HNN	HENDERSON	WV	US	38.75	-82.03
HQM	HOQUIAM	WA	US	46.95	-124.15
HRV	HARVEY	LA	US	29.85	-90.00
HTO	EAST HAMPTON	NY	US	40.92	-72.32
HUH	WHATCOM	WA	US	48.95	-122.58
HUL	HOULTON	ME	US	46.04	-67.83
HVE	HANKSVILLE	UT	US	38.42	-110.70
HVR	HAVRE	MT	US	48.54	-109.77
IAH	HOUSTON INTL	TX	US	29.96	-95.35
ICT	WICHITA	KS	US	37.75	-97.58
IGB	BIGBEE	MS	US	33.48	-88.52
IIU	LOUISVILLE	KY	US	38.10	-85.58
ILC	WILSON CREEK	NV	US	38.25	-114.39
ILM	WILMINGTON	NC	US	34.35	-77.87
IND	INDIANAPOLIS	IN	US	39.81	-86.37
INK	WINK	TX	US	31.87	-103.24
INL	INTL FALLS	MN	US	48.57	-93.40
INW	WINSLOW	AZ	US	35.06	-110.80
IOW	IOWA CITY	IA	US	41.52	-91.61
IRK	KIRKSVILLE	MO	US	40.14	-92.59
IRQ	COLLIERS	SC	US	33.71	-82.16
ISN	WILLISTON	ND	US	48.18	-103.63
JAC	JACKSON	WY	US	43.62	-110.73
JAN	JACKSON	MS	US	32.51	-90.17
JCT	JUNCTION	TX	US	30.60	-99.82
JFK	NEW YORK/JFK	NY	US	40.63	-73.77
JHW	JAMESTOWN	NY	US	42.19	-79.12
JNC	GRAND JUNCTION	CO	US	39.06	-108.79
JOT	JOLIET	IL	US	41.55	-88.32
JST	JOHNSTOWN	PA	US	40.32	-78.83
LAA	LAMAR	CO	US	38.20	-102.69
LAR	LARAMIE	WY	US	41.33	-105.72
LAS	LAS VEGAS	NV	US	36.08	-115.16
LAX	LOS ANGELES	CA	US	33.93	-118.43
LBB	LUBBOCK INTL	TX	US	33.70	-101.92
LBF	NORTH PLATTE	NE	US	41.13	-100.72
LBL	LIBERAL	KS	US	37.04	-100.97
LCH	LAKE CHARLES	LA	US	30.14	-93.11
LEV	GRAND ISLE	LA	US	29.18	-90.10
LFK	LUFKIN	TX	US	31.16	-94.72
LGC	LA GRANGE	GA	US	33.05	-85.21
LIT	LITTLE ROCK	AR	US	34.68	-92.18
LKT	SALMON	ID	US	45.02	-114.08
LKV	LAKEVIEW	OR	US	42.49	-120.51
LOZ	LONDON	KY	US	37.03	-84.12

STATION ID	NAME	STATE	COUNTRY	LATITUDE (degrees)	LONGITUDE (degrees)
LRD	LAREDO	TX	US	27.48	-99.42
LWT	LEWISTOWN	MT	US	47.05	-109.61
LYH	LYNCHBURG	VA	US	37.25	-79.23
MAF	MIDLAND	TX	US	32.02	-102.18
MBS	SAGINAW	MI	US	43.53	-84.08
MCB	MC COMB	MS	US	31.30	-90.26
MCI	KANSAS CITY	MO	US	39.29	-94.74
MCK	MC COOK	NE	US	40.20	-100.59
MCN	MACON	GA	US	32.69	-83.65
MCW	MASON CITY	IA	US	43.09	-93.33
MEI	MERIDIAN	MS	US	32.38	-88.80
MEM	MEMPHIS	TN	US	35.06	-89.98
MGM	MONTGOMERY	AL	US	32.22	-86.32
MIA	MIAMI	FL	US	25.80	-80.30
MKG	MUSKEGON	MI	US	43.17	-86.04
MLC	MC CALESTER	OK	US	34.85	-95.78
MLD	MALAD CITY	ID	US	42.20	-112.45
MLP	MULLAN PASS	ID	US	47.46	-115.65
MLS	MILES CITY	MT	US	46.38	-105.95
MLT	MILLINOCKET	ME	US	45.58	-68.52
MLU	MONROE	LA	US	32.52	-92.03
MOD	MODESTO	CA	US	37.63	-120.96
MOT	MINOT	ND	US	48.26	-101.29
MPV	MONTPELIER	VT	US	44.22	-72.57
MRF	MARFA	TX	US	30.30	-103.95
MSL	MUSCLE SHOALS	AL	US	34.70	-87.48
MSP	MINNEAPOLIS	MN	US	44.88	-93.23
MSS	MASSENA	NY	US	44.91	-74.72
MTU	MYTON	UT	US	40.15	-110.13
MZB	MISSION BAY	CA	US	32.78	-117.23
OAK	OAKLAND	CA	US	37.73	-122.22
OAL	COALDALE	NV	US	38.00	-117.77
OBH	WOLBACH	NE	US	41.38	-98.35
OCS	ROCK SPRINGS	WY	US	41.59	-109.02
ODF	TOCCOA	GA	US	34.70	-83.30
ODI	NODINE	MN	US	43.91	-91.47
OED	MEDFORD	OR	US	42.48	-122.91
OKC	OKLAHOMA CITY	OK	US	35.36	-97.61
OMN	ORMOND BCH	FL	US	29.30	-81.11
ONL	ONEILL	NE	US	42.47	-98.69
ONP	NEWPORT	OR	US	44.58	-124.06
ORD	O'HARE INTL	IL	US	41.98	-87.90
ORF	NORFOLK	VA	US	36.89	-76.20
ORL	ORLANDO	FL	US	28.54	-81.34
OSW	OSWEGO	KS	US	37.15	-95.20
OVR	OMAHA	NE	US	41.17	-95.74
PBI	WEST PALM BCH	FL	US	26.68	-80.09

STATION ID	NAME	STATE	COUNTRY	LATITUDE (degrees)	LONGITUDE (degrees)
PDT	PENDLETON	OR	US	45.70	-118.94
PDX	PORTLAND	OR	US	45.58	-122.60
PGS	PEACH SPRINGS	AZ	US	35.62	-113.54
PHX	PHOENIX	AZ	US	33.43	-112.02
PIE	ST PETERSBURG	FL	US	27.91	-82.68
PIH	POCATELLO	ID	US	42.87	-112.65
PIR	PIERRE	SD	US	44.40	-100.17
PLB	PLATTSBURGH	NY	US	44.69	-73.52
PMM	PULLMAN	MI	US	42.47	-86.11
PQI	PRESQUE ISLE	ME	US	46.77	-68.09
PSB	PHILLIPSBURG	PA	US	40.92	-77.99
PSK	DUBLIN	VA	US	37.09	-80.71
PSX	PALACIOS	TX	US	28.76	-96.31
PUB	PUEBLO	CO	US	38.29	-104.43
PVD	PROVIDENCE	RI	US	41.72	-71.43
PWE	PAWNEE CITY	NE	US	40.20	-96.21
PXV	POCKET CITY	IN	US	37.93	-87.76
PYE	POINT REYES	CA	US	38.08	-122.87
PZD	PECAN	GA	US	31.66	-84.29
RAP	RAPID CITY	SD	US	43.98	-103.01
RBL	RED BLUFF	CA	US	40.10	-122.24
RDU	RALEIGH-DURHAM	NC	US	35.87	-78.78
REO	ROME	OR	US	42.59	-117.87
RHI	RHINELANDER	WI	US	45.63	-89.45
RIC	RICHMOND	VA	US	37.50	-77.32
ROD	ROSEWOOD	OH	US	40.29	-84.04
RSK	RATTLESNAKE	NM	US	36.75	-108.10
RSW	LEE COUNTY	FL	US	26.53	-81.78
RWF	REDWWOD FALLS	MN	US	44.47	-95.13
RZC	RAZORBACK	AR	US	36.25	-94.12
RZS	SANTA BARBARA	CA	US	34.51	-119.77
SAC	SACRAMENTO	CA	US	38.44	-121.55
SAT	SAN ANTONIO	TX	US	29.64	-98.46
SAV	SAVANNAH	GA	US	32.16	-81.11
SAW	SAWYER	MI	US	46.36	-87.40
SAX	SPARTA	NJ	US	41.07	-74.54
SBY	SALISBURY	MD	US	38.35	-75.52
SEA	SEATTLE	WA	US	47.44	-122.31
SGF	SPRINGFIELD	MO	US	37.36	-93.33
SHR	SHERIDAN	WY	US	44.84	-107.06
SIE	SEA ISLE	NJ	US	39.10	-74.80
SJI	SEMMLNES	AL	US	30.73	-88.36
SJN	ST JOHNS	AZ	US	34.42	-109.14
SJT	SAN ANGELO	TX	US	31.38	-100.46
SLC	SALT LAKE CITY	UT	US	40.85	-111.98
SLN	SALINA	KS	US	38.93	-97.62
SLT	SLATE RUN	PA	US	41.51	-77.97

STATION ID	NAME	STATE	COUNTRY	LATITUDE (degrees)	LONGITUDE (degrees)
SNS	SALINAS	CA	US	36.66	-121.60
SNY	SIDNEY	NE	US	41.10	-102.98
SPA	SPARTANBURG	SC	US	35.03	-81.93
SPS	WICHITA FALLS	TX	US	33.99	-98.59
SQS	SIDON	MS	US	33.46	-90.28
SRQ	SARASOTA	FL	US	27.40	-82.55
SSM	SAULT STE MARIE	MI	US	46.41	-84.31
SSO	SAN SIMON	AZ	US	32.27	-109.26
STL	ST LOUIS	MO	US	38.86	-90.48
SYR	SYRACUSE	NY	US	43.16	-76.20
TBC	TUBA CITY	AZ	US	36.12	-111.27
TBE	TOBE	CO	US	37.27	-103.60
TCC	TUCUMCARI	NM	US	35.18	-103.60
TCS	TRUTH OR CONS	NM	US	33.28	-107.28
TLH	TALLAHASSEE	FL	US	30.56	-84.37
TOU	NEAH BAY	WA	US	48.30	-124.63
TRM	THERMAL	CA	US	33.63	-116.16
TTH	TERRE HAUTE	IN	US	39.49	-87.25
TTT	MAVERICK	TX	US	32.87	-97.04
TUL	TULSA	OK	US	36.20	-95.79
TUS	TUCSON	AZ	US	32.10	-110.92
TVC	TRAVERSE CITY	MI	US	44.67	-85.55
TWF	TWIN FALLS	ID	US	42.48	-114.49
TXK	TEXARKANA	AR	US	33.51	-94.07
TXO	TEXICO	TX	US	34.50	-102.84
UIN	QUINCY	IL	US	39.85	-91.28
VRB	VERO BEACH	FL	US	27.68	-80.49
VUZ	VULCAN	AL	US	33.67	-86.90
VXV	KNOXVILLE	TN	US	35.90	-83.89
YDC	PRINCETON	BC	CANADA	49.47	-120.52
YKM	YAKIMA	WA	US	46.57	-120.45
YOW	OTTAWA	ON	CANADA	45.32	-75.67
YQB	QUEBEC	QB	CANADA	46.80	-71.38
YQL	LETHBRIDGE	AB	CANADA	49.63	-112.80
YQT	THUNDER BAY	ON	CANADA	48.37	-89.32
YQV	YORKTON	SA	CANADA	51.27	-102.47
YSC	SHERBROOKE	QB	CANADA	45.43	-71.68
YSJ	ST JOHN	NB	CANADA	45.32	-65.88
YVV	WIARTON	ON	CANADA	44.75	-81.10
YWG	WINNIPEG	MB	CANADA	49.90	-97.23
YXC	CRANBROOK	BC	CANADA	49.60	-115.78
YXH	MEDICINE HAT	AB	CANADA	50.02	-110.72
YYN	SWIFT CURRENT	SA	CANADA	50.28	-107.68
YYZ	TORONTO	ON	CANADA	43.67	-79.63

16 APPENDIX G: WSR-88D WEATHER RADAR NETWORK

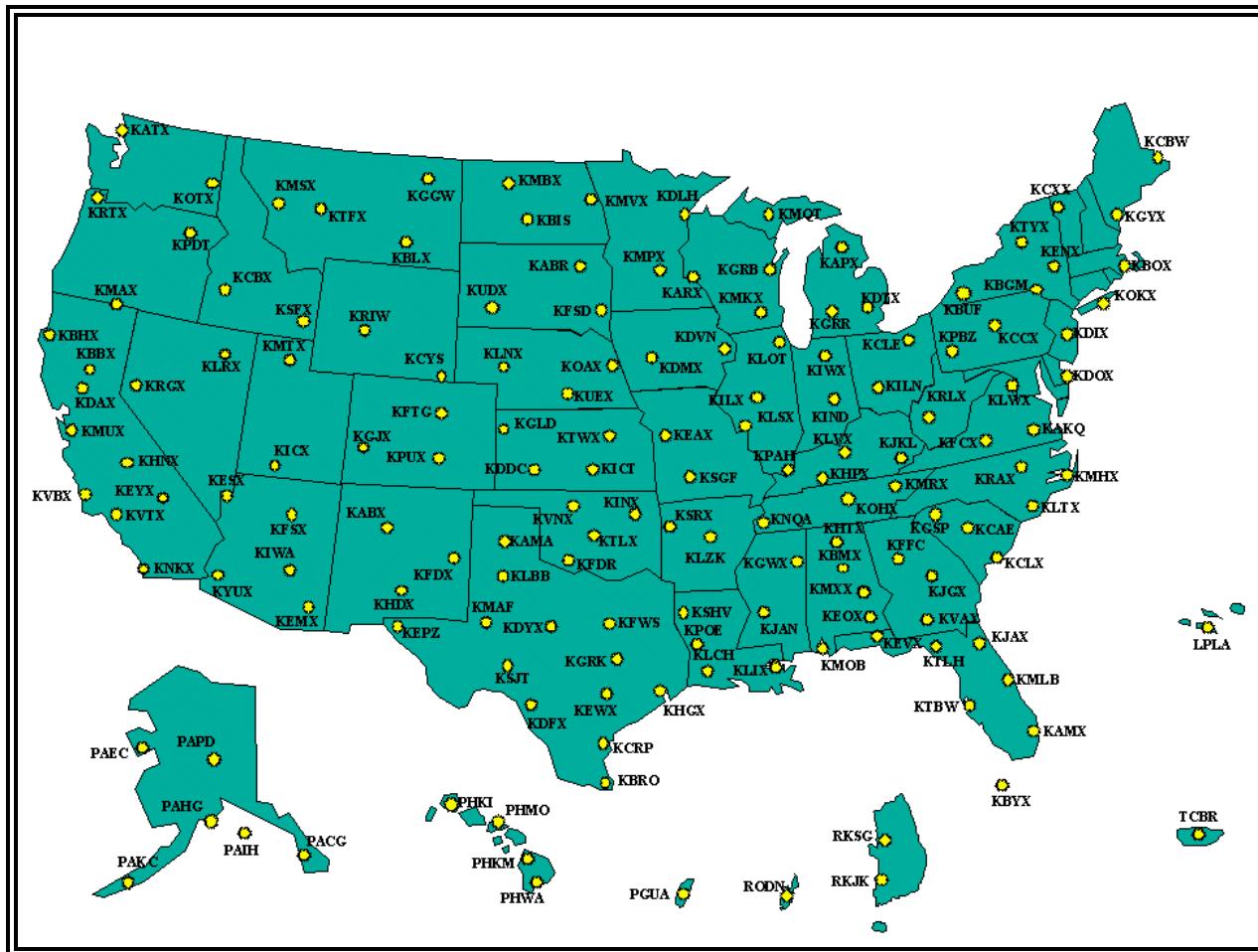


Figure G-1. WSR-88D Weather Radar Network Sites

Table G-1. WSR-88D Weather Radar Network

ICAO	NEXRAD SITENAME	CITY	COUNTY	STATE	AGENCY	ELEVATION
KABR	Aberdeen	Aberdeen	Brown	SD	NWS	396.85 m (1302.49 ft)
KABX	Albuquerque	Albuquerque	Bernalillo	NM	NWS	1789.18 m (5869.42 ft)
KAKQ	Norfolk	Wakefield	Sussex	VA	NWS	34.14 m (111.55 ft)
KAMA	Amarillo	Amarillo	Potter	TX	NWS	1093.32 m (3585.96 ft)
KAMX	Miami	Miami	Dade	FL	NWS	4.27 m (13.12 ft)
KAPX	Northcentral Lower Michigan	Gaylord	Alpena	MI	NWS	446.23 m (1463.25 ft)
KARX	La Crosse	La Crosse	La Crosse	WI	NWS	388.92 m (1276.25 ft)
KATX	Seattle	Everett	Island	WA	NWS	150.57 m (495.41 ft)
KBBX	Beale AFB	Oroville	Butte	CA	AFWA	52.73 m (173.88 ft)
KBGM	Binghamton	Binghamton	Broome	NY	NWS	489.51 m (1607.61 ft)
KBHX	Eureka (Bunker Hill)	Eureka	Humboldt	CA	NWS	732.13 m (2401.57 ft)
KBIS	Bismarck	Bismarck	Burleigh	ND	NWS	505.36 m (1656.82 ft)
KBLX	Billings	Billings	Yellowstone	MT	NWS	1096.67 m (3599.08 ft)
KBMX	Birmingham	Alabaster	Shelby	AL	NWS	196.6 m (646.33 ft)
KBOX	Boston	Taunton	Bristol	MA	NWS	35.97 m (118.11 ft)
KBRO	Brownsville	Brownsville	Cameron	TX	NWS	7.01m (22.97 ft)
KBUF	Buffalo	Buffalo	Erie	NY	NWS	211.23 m (692.26 ft)
KBYX	Key West	Boca Chica Key	Monroe	FL	NWS	2.44 m (6.56 ft)
KCAE	Columbia	West Columbia	Lexington	SC	NWS	70.41 m (229.66 ft)
KCBW	Caribou	Houlton	Aroostook	ME	NWS	227.38 m (744.75 ft)
KCBX	Boise	Boise	Ada	ID	NWS	932.99 m (3061.02 ft)

ICAO	NEXRAD SITENAME	CITY	COUNTY	STATE	AGENCY	ELEVATION
KCCX	State College	State College	Centre	PA	NWS	733.04 m (2404.86 ft)
KCLE	Cleveland	Cleveland	Cuyahoga	OH	NWS	232.56 m (764.44 ft)
KCLX	Charleston, SC	Grays	Beaufort	SC	NWS	29.57 m (98.43 ft)
KCRP	Corpus Christi	Corpus Christi	Nueces	TX	NWS	13.72 m (45.93 ft)
KCXX	Burlington	Colchester	Chittenden	VT	NWS	96.62 m (318.24 ft)
KCYS	Cheyenne	Cheyenne	Laramie	WY	NWS	1867.81 m (6128.61 ft)
KDAX	Sacramento	Davis	Yolo	CA	NWS	9.14 m (29.53 ft)
KDDC	Dodge City	Dodge City	Ford	KS	NWS	789.43 m (2588.58 ft)
KDFX	Laughlin AFB	Bracketville	Kinney	TX	AFWA	344.73 m (1131.89 ft)
KDGX	Jackson/Brandon, MS	Brandon	Rankin	MS	NWS	150.92 m (495.41 ft)
KDIX	Philadelphia	Fort Dix	Burlington	NJ	NWS	45.42 m (147.64 ft)
KDLH	Duluth	Duluth	St Louis	MN	NWS	435.25 m (1427.17 ft)
KDMX	Des Moines	Johnston	Polk	IA	NWS	299.01 m (980.97 ft)
KDOX	Dover AFB	Ellendale State Forest	Sussex	DE	AFWA	15.24 m (49.21 ft)
KDTX	Detroit	White Lake	Oakland	MI	NWS	326.75 m (1072.83 ft)
KDVN	Quad Cities	Davenport	Scott	IA	NWS	229.82 m (754.59 ft)
KDYX	Dyess AFB	Moran	Shackelford	TX	AFWA	462.38 m (1515.75 ft)
KEAX	Pleasant Hill	Pleasant Hill	Cass	MO	NWS	303.28 m (994.09 ft)
KEMX	Tucson	Tucson	Pima	AZ	NWS	1586.48 m (5203.41 ft)
KENX	Albany	East Berne	Albany	NY	NWS	556.56 m (1827.43 ft)
KEOX	Ft Rucker	Echo	Dale	AL	AFWA	132.28 m (433.07 ft)
KEPZ	El Paso	Santa Teresa	Dona Ana	NM	NWS	1250.9 m (4104.33 ft)

ICAO	NEXRAD SITENAME	CITY	COUNTY	STATE	AGENCY	ELEVATION
KESX	Las Vegas	Las Vegas	Clark	NV	NWS	1483.46 m (4865.49 ft)
KEVX	Eglin AFB	Red Bay	Walton	FL	AFWA	42.67 m (141.08 ft)
KEWX	Austin/San Antonio	New Braunfels	Comal	TX	NWS	192.94 m (633.2 ft)
KEYX	Edwards AFB	Boron	San Bernadino	CA	AFWA	840.33 m (2755.91 ft)
KFCX	Roanoke	Roanoke	Floyd	VA	NWS	874.17 m (2867.45 ft)
KFDR	Altus AFB	Frederick	Tillman	OK	AFWA	386.18 m (1266.4 ft)
KFDX	Cannon AFB	Field	Curry	NM	AFWA	1417.32 m (4648.95 ft)
KFFC	Atlanta	Peachtree City	Fayette	GA	NWS	261.52 m (859.58 ft)
KFSD	Sioux Falls	Sioux Falls	Minnehaha	SD	NWS	435.86 m (1430.45 ft)
KFSX	Flagstaff	Flagstaff	Coconino	AZ	NWS	2260.7 m (7417.98 ft)
KFTG	Denver	Front Range	Arapahoe	CO	NWS	1675.49 m (5495.41 ft)
KFWS	Dallas/Ft Worth	Fort Worth	Tarrant	TX	NWS	208.18 m (682.41 ft)
KGGW	Glasgow	Glasgow	Valley	MT	NWS	693.72 m (2276.9 ft)
KGJX	Grand Junction	Grand Junction	Mesa	CO	NWS	3045.26 m (9990.16 ft)
KGLD	Goodland	Goodland	Sherman	KS	NWS	1112.82 m (3651.57 ft)
KGRB	Green Bay	Green Bay	Brown	WI	NWS	207.87 m (682.41 ft)
KGRK	Ft Hood	Granger	Bell	TX	AFWA	163.98 m (538.06 ft)
KGRR	Grand Rapids	Grand Rapids	Kent	MI	NWS	237.13 m (777.56 ft)
KGSP	Greer	Greer	Spartanburg	SC	NWS	286.51 m (941.6 ft)
KGWX	Columbus AFB	Greenwood Springs	Monroe	MS	AFWA	145.08 m (475.72 ft)
KGYX	Portland, Me	Gray	Cumberland	ME	NWS	124.66 m (410.1 ft)
KHDX	Holloman AFB	Ruidoso	Dona Ana	NM	AFWA	1286.87 m (4222.44 ft)
KHGX	Houston	Dickinson	Galveston	TX	NWS	5.49 m (16.4 ft)

ICAO	NEXRAD SITENAME	CITY	COUNTY	STATE	AGENCY	ELEVATION
KHNX	San Joaquin Valley	Hanford	Kings	CA	NWS	74.07 m (242.78 ft)
KHPX	Ft Campbell	Trenton	Todd	KY	AFWA	175.56 m (577.43 ft)
KHTX	Northeast Alabama	Hytop	Jackson	AL	NWS	537.06 m (1761.81 ft)
KICT	Wichita	Wichita	Sedgwick	KS	NWS	406.91 m (1335.3 ft)
KICX	Cedar City	Cedar City	Iron	UT	NWS	3230.88 m (10600.39 ft)
KILN	Cincinnati	Wilmington	Clinton	OH	NWS	321.87 m (1056.43 ft)
KILX	Lincoln	Lincoln	Logan	IL	NWS	177.39 m (580.71 ft)
KIND	Indianapolis	Indianapolis	Marion	IN	NWS	240.79 m (790.68 ft)
KINX	Tulsa	Inola	Rogers	OK	NWS	203.61 m (669.29 ft)
KIWA	Phoenix	Phoenix	Maricopa	AZ	NWS	412.39 m (1351.71 ft)
KIWX	Northern Indiana	North Webster	Kosciusko	IN	NWS	292.3 m (958.01 ft)
KJAX	Jacksonville	Jacksonville	Duval	FL	NWS	10.06 m (32.81 ft)
KJGX	Robins AFB	Jefferson-ville	Twiggs	GA	AFWA	158.8 m (521.65 ft)
KJKL	Jackson, KY	Jackson	Breathitt	KY	NWS	415.75 m (1364.83 ft)
KLBB	Lubbock	Lubbock	Lubbock	TX	NWS	993.34 m (3257.87 ft)
KLCH	Lake Charles	Lake Charles	Calcasieu	LA	NWS	3.96 m (13.12 ft)
KLIX	Slidell	Slidell	St Tammany	LA	NWS	7.32 m (22.97 ft)
KLNX	North Platte	North Platte	Logan	NE	NWS	905.26 m (2969.16 ft)
KLOT	Chicago	Romeoville	Will	IL	NWS	202.08 m (662.73 ft)
KLRX	Elko	Elko	Lander	NV	NWS	2055.57 m (6745.41 ft)
KLSX	St Louis	Weldon Spring	St Charles	MO	NWS	185.32 m (606.96 ft)
KLTX	Wilmington	Shallotte	Brunswick	NC	NWS	19.51 m (65.62 ft)
KLVX	Louisville	Fort Knox	Hardin	KY	NWS	219.15 m (718.5 ft)

ICAO	NEXRAD SITENAME	CITY	COUNTY	STATE	AGENCY	ELEVATION
KLWX	Sterling	Sterling	Loudoun	VA	NWS	82.91 m (272.31 ft)
KLZK	Little Rock	North Little Rock	Pulaski	AR	NWS	173.13 m (567.59 ft)
KMAF	Midland/Odessa	Midland	Midland	TX	NWS	874.17 m (2867.45 ft)
KMAX	Medford	Medford	Jackson	OR	NWS	2289.96 m (7513.12 ft)
KMBX	Minot AFB	Deering	Mchenry	ND	AFWA	455.07 m (1492.78 ft)
KMHX	Morehead City	Newport	Carteret	NC	NWS	9.45 m (29.53 ft)
KMKX	Milwaukee	Dousman	Waukesha	WI	NWS	292 m (958.01 ft)
KMLB	Melbourne	Melbourne	Brevard	FL	NWS	10.67 m (36.09 ft)
KMOB	Mobile	Mobile	Mobile	AL	NWS	63.4 m (206.69 ft)
KMPX	Minneapolis	Chanhassen	Carver	MN	NWS	288.34 m (944.88 ft)
KMQT	Marquette	Negaunee	Marquette	MI	NWS	430.07 m (1410.76 ft)
KMRX	Knoxville	Morristown	Hamblen	TN	NWS	407.52 m (1338.58 ft)
KMSX	Missoula	Missoula	Missoula	MT	NWS	2394.2 m (7854.33 ft)
KMTX	Salt Lake City	Salt Lake City	Salt Lake	UT	NWS	1969.01 m (6459.97 ft)
KMUX	San Francisco	Los Gatos	Santa Clara	CA	NWS	1057.35 m (3467.85 ft)
KMVX	Fargo/Grand Forks	Grand Forks	Trail	ND	NWS	300.53 m (987.53 ft)
KMXX	Maxwell AFB	Carrville	Tallapoosa	AL	AFWA	121.92 m (400.26 ft)
KNKX	San Diego	San Diego	San Diego	CA	NWS	291.08 m (954.72 ft)
KNQA	Memphis	Millington	Shelby	TN	NWS	85.95 m (282.15 ft)
KOAX	Omaha	Valley	Douglas	NE	NWS	349.91 m (1148.29 ft)
KOHX	Nashville	Old Hickory	Wilson	TN	NWS	176.48 m (577.43 ft)
KOKX	Brookhaven	Upton	Suffolk	NY	NWS	25.91 m (85.3 ft)
KOTX	Spokane	Spokane	Spokane	WA	NWS	726.64 m (2385.17 ft)

ICAO	NEXRAD SITENAME	CITY	COUNTY	STATE	AGENCY	ELEVATION
KPAH	Paducah	Paducah	Mccracken	KY	NWS	119.48 m (390.42 ft)
KPBZ	Pittsburgh	Coraopolis	Allegheny	PA	NWS	361.19 m (1184.38 ft)
KPDT	Pendleton	Pendleton	Umatilla	OR	NWS	461.77 m (1515.75 ft)
KPOE	Ft Polk	Ft Polk	Vernon	LA	AFWA	124.36 m (406.82 ft)
KPUX	Pueblo	Pueblo	Pueblo	CO	NWS	1599.9 m (5249.34 ft)
KRAX	Raleigh/ Durham	Clayton	Wake	NC	NWS	106.07 m (347.77 ft)
KRGX	Reno	Nixon	Washoe	NV	NWS	2529.54 m (8300.52 ft)
KRIW	Riverton/ Lander	Riverton	Fremont	WY	NWS	1697.13 m (5567.59 ft)
KRLX	Charleston, WV	Charleston	Kanawha	WV	NWS	329.18 m (1079.4 ft)
KRTX	Portland, OR	Portland	Washington	OR	NWS	479.15 m (1571.52 ft)
KSFX	Pocatello	Springfield	Bingham	ID	NWS	1363.68 m (4475.07 ft)
KSGF	Springfield	Springfield	Greene	MO	NWS	389.53 m (1279.53 ft)
KSHV	Shreveport	Shreveport	Caddo	LA	NWS	83.21 m (272.31 ft)
KSJT	San Angelo	San Angelo	Tom Green	TX	NWS	576.07 m (1889.76 ft)
KSOX	Santa Ana Mountains	Santa Ana Mountains	Orange	CA	NWS	927 m (3041.34 ft)
KSRX	Western Arkansas	Chaffee Ridge	Sebastian	AR	NWS	195.07 m (639.76 ft)
KTBW	Tampa	Ruskin	Hillsborough	FL	NWS	12.5 m (39.37 ft)
KTFX	Great Falls	Great Falls	Cascade	MT	NWS	1132.03 m (3713.91 ft)
KTLH	Tallahassee	Tallahassee	Leon	FL	NWS	19.2 m (62.34 ft)
KTLX	Norman	Midwest City	Oklahoma	OK	NWS	369.72 m (1213.91 ft)
KTWX	Topeka	Topeka	Wabaunsee	KS	NWS	416.66 m (1368.11 ft)
KTYX	Ft Drum	Montague	Lewis	NY	AFWA	562.66 m (1847.11 ft)
KUDX	Rapid City	New Underwood	Pennington	SD	NWS	919.28 m (3015.09 ft)

ICAO	NEXRAD SITENAME	CITY	COUNTY	STATE	AGENCY	ELEVATION
KUEX	Grand Island	Blue Hill	Webster	NE	NWS	602.28 m (1975.07 ft)
KVAX	Moody AFB	South Stockton	Lanier	GA	AFWA	54.25 m (177.17 ft)
KVBX	Vandenberg AFB	Orcutt	Santa Barbara	CA	AFWA	372.77 m (1223.75 ft)
KVNX	Vance AFB	Cherokee	Alfalfa	OK	AFWA	368.81 m (1210.63 ft)
KVTX	Los Angeles	Los Angeles	Ventura	CA	NWS	830.88 m (2726.38 ft)
KVWX	Evansville, IN (Non-NEXRAD)	Owensville	Gibson	IN	NWS	155.75 m (511.81 ft)
KYUX	Yuma	Yuma	Pima	AZ	NWS	53.04 m (173.88 ft)
LPLA	Lajes AB	Santa Barbara	N/A	AZO RES	AFWA	1016.2 m (3333.33 ft)
PABC	Bethel FAA	Bethel	N/A	AK	FAA	49.07 m (160.76 ft)
PACG	Sitka FAA	Biorka Island	N/A	AK	FAA	63.09 m (206.69 ft)
PAEC	Nome FAA	Nome	N/A	AK	FAA	17.68 m (59.06 ft)
PAHG	Anchorage FAA	Kenai	N/A	AK	FAA	73.76 m (242.78 ft)
PAIH	Middleton Island	Middleton Island	N/A	AK	FAA	20.42 m (65.62 ft)
PAKC	King Salmon FAA	King Salmon	N/A	AK	FAA	19.2 m (62.34 ft)
PAPD	Fairbanks FAA	Fairbanks	N/A	AK	FAA	790.35 m (2591.86 ft)
PGUA	Andersen AFB	Andersen AFB	N/A	GUAM	AFWA	80.47 m (262.47 ft)
PHKI	South Kauai FAA	South Kauai	Kauai	HI	FAA	54.56 m (180.45 ft)
PHKM	Kamuela/Kohala Apt	Kamuela	Hawaii	HI	FAA	1161.9 m (3812.34 ft)
PHMO	Molokai FAA	Molokai	Molokai	HI	FAA	415.44 m (1361.55 ft)
PHWA	South Shore FAA	Naalehu	Hawaii	HI	FAA	420.62 m (1381.23 ft)
RKJK	Kunsan AB	Kunsan Ab	N/A	KOREA	AFWA	23.77 m (78.74 ft)
RKSG	Camp Humphreys	Camp Humphreys	N/A	KOREA	AFWA	15.85 m (52.49 ft)

ICAO	NEXRAD SITENAME	CITY	COUNTY	STATE	AGENCY	ELEVATION
RODN	<u>Kadena AB</u>	Kadena Ab	N/A	JAPAN	AFWA	66.45 m (216.54 ft)
TJUA	<u>San Juan FAA</u>	San Juan	N/A	PR	FAA	851.61 m (2795.28 ft)

17 APPENDIX H: AWC Geographical Area Designator Map

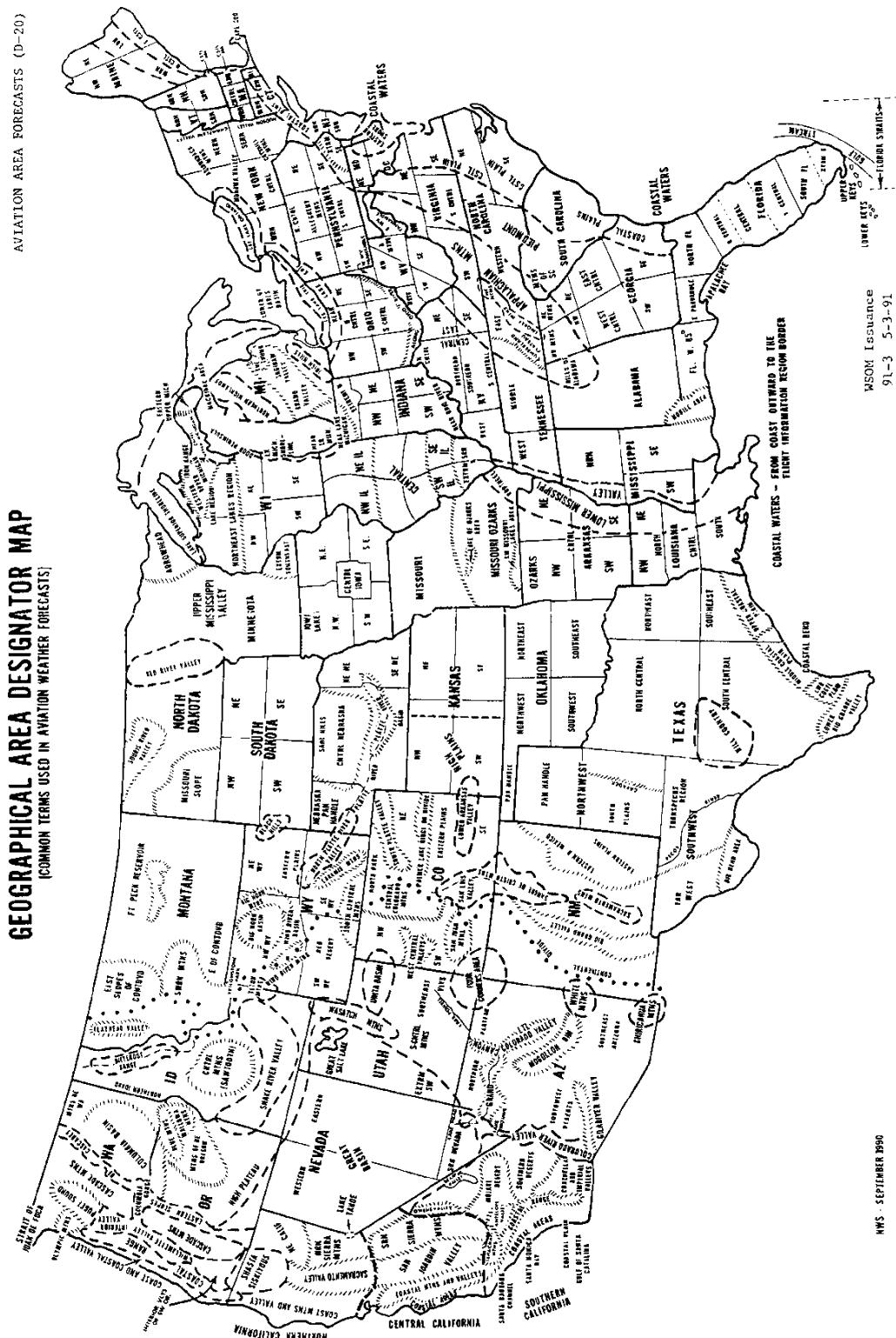


Figure H-1: AWC Geographical Area Designator Map

18 APPENDIX I: Present Weather Symbols

	0	1	2	3	4	5	6	7	8	9
00										
10										
20										
30										
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70										
80										
90										

Figure I-1. Present Weather Symbols with Text Explanation

Matching of METAR present weather text to symbol in table below is not necessarily endorsed by the National Weather Service or the World Meteorological Organization. Blue numbers in upper-left corner of white boxes indicate the priority for plotting in event more than one symbol is possible (symbols in gray boxes have no corresponding METAR present weather text). Graphical representation of METARs using this table found at <http://adds.aviationweather.gov>

	0	1	2	3	4	5	6	7	8	9
00	○	○	○	○	3 FU VA	59 HZ	14 DU	13 \$ SA BLSA VCBLSA BLPY	9 PO VCPO	12 (S) VCSS VCDS
10	58 BR	==	56 MIFG	50 VCTS	57 VIRGA)•(51 VCSH	33 TS	2 SQ	1)(FC +FC
20	·]	·]	*]	:]	~]	•]	•]	•]	≡]]
30	S	11 S SS DS DRSA DRDU	S	S	10 S +SS +DS	S	48 + BLSN VCBLSN	+*	47 + DRSN	+
40	55 VCFG	54 BCFG	==	≡	53 PRFG	52 FG	≡	≡	≡	49 FZFG
50	,	46 -DZ	,	42 DZ	,	39 +DZ	22 -FZDZ	21 FZDZ +FZDZ	35 DZ -RA -DZ RA -DZ -RA	34 DZ RA +DZ RA DZ +RA +DZ +RA
60	*	44 -RA	:	41 RA	:	37 +RA	24 -FZRA	23 FZRA +FZRA	26 -RA -SN -RA SN -DZ -SN -DZ SN	25 RA SN DZ SN +RA SN +DZ SN RA +SN DZ +SN +RA +SN DZ +SN
70	*	43 -SN	*	40 SN	*	36 +SN	32 UP	19 SG	31 IC	20 PL PE SHPL SHPE
80	45 -SH -SHRA	38 SH +SH SHRA +SHRA	•	28 -SHRA SN -SHSN RA -SHRA -SN -SHSN -RA	27 SHRA SN SHSN RA +SHRA SN +SHSN RA	30 -SHSN	29 SHSN +SHSN	18 GS -SHGS	16 GS SHGS +SHGS	17 -GR -SHGR
90	15 GR SHGR +GR +SHGR	R•	R•	R•*	R•*	8 TSRA TSSN TSPL	7 TSGR TSGS	6 +TSRA +TSSN +TSPL	4 any TS and any SA or DU	5 +TSGS +TSGR

Figure I-2. Present Weather Symbols with Corresponding METAR/SPECI Present Weather Code

19 APPENDIX J: Turbulence and Icing Intensity Depictions

Table J-1. Turbulence Intensity

Intensity	Aircraft Reaction	Symbol
Light	Loose objects in aircraft remain at rest.	
Moderate	Unsecured objects are dislodged. Occupants feel definite strains against seat belts and shoulder straps.	
Severe	Occupants thrown violently against seat belts. Momentary loss of aircraft control. Unsecured objects tossed about.	
Extreme	Aircraft is tossed violently about, impossible to control. May cause structural damage.	

Table J-2. Icing Intensity

Intensity	Aircraft Reaction	Symbol
Trace	Ice becomes perceptible. Rate of accumulation slightly greater than sublimation. Deicing/anti-icing equipment is not used unless encountered for an extended period of time (over 1 hour).	
Light	The rate of accumulation may create a problem if flight is prolonged in this environment (over 1 hour). Occasional use of deicing/anti-icing equipment removes or prevents accumulation. It does not present a problem if this equipment is used.	
Moderate	The rate of accumulation is such that even short encounters become potentially hazardous, and use of deicing/anti-icing equipment or diversion is necessary.	
Severe	The rate of accumulation is such that deicing/anti-icing equipment fails to reduce or control the hazard. Immediate diversion is necessary.	